# Chhattisgarh State Renewable Energy Development Agency (CREDA)

**(Dept. of Energy, Govt. of Chhattisgarh)**

Near Energy Education Park, Village Fundhar
VIP (Air Port Road) Raipur 492015 (C.G.)
Ph.: 91-9425253564
***E-mail: credatendercell@gmail.com, Website: www.creda.co.in***

**E-BID DOCUMENT No.105525/CREDA/SCIP&IGGY/RE-VI/2022 Dated: 29-07-2022**

***UNIQUE BID ID – 105525***

**E-TENDER FOR STANDARDIZATION OF RATES FOR SURVEY, DESIGN, SUPPLY, INSTALLATION, COMMISSIONING OF SPV COMMUNITY IRRIGATION PROJECT & INDIRA GAON GANGA YOJANA WITH ALL ALLIED WORKS WITH FIVE YEARS COMPREHENSIVE ONSITE UNCONDITIONAL WARRANTY ANYWHERE IN THE STATE OF CHHATTISGARH**

| Particulars | From Date & Time | To Date & Time | Place |
|---|---|---|---|
| Date of issue of notice inviting bid | **29-07-2022 05:00 pm** | **----** | ----- |
| Period of availability of bidding document at website | **29-07-2022 05:00 pm** | **25-08-2022 05.00 pm** | http://www.creda.co.in/Tender http://eproc.cgstate.gov.in |
| Submission of Pre Bid queries in writing | **29-07-2022 05:00 pm** | **08-08-2022 05:00 pm** | To be submitted hard copy at CREDA, HO Raipur or through email at credatendercell@gmail.com |
| Display of Sample | **10-08-2022 02:00 pm** | **10-08-2022 05:00 pm** | At CREDA H.O. Raipur |
| Submission of Online Bid (Technical Bid + e-Price Bid) and Submission of Documents in Hard Copy | **29-07-2022 05:00 pm** | **25-08-2022 05.00 PM** | https://eproc.cgstate.gov.in |
| Opening of Technical Bid | **26-08-2022 3:00 PM Onwards** | | At CREDA H.O. Raipur (https://eproc.cgstate.gov.in) |
| Evaluation of technical bid and Declaration of Eligible Bidder | **29-08-2022 12:00 PM Onwards** | | At Vikas Bhawan, PMGSY, Conference Hall, Civil Lines, Raipur |
| Opening of e- Price Bid (The financial Part of the bid – bidders who qualified in technical bid) | **31-08-2022 12:00 PM Onwards** | | At Vikas Bhawan, PMGSY, Conference Hall, Civil Lines, Raipur |

***Tender Document Cost– Rs.10000 + 18% GST = Rs.11,800.00***
***(in words Rupees Eleven Thousand Eight Hundred Only) to be deposited in CREDA's account along with EMD via*** Demand Draft/Pay Order or RTGS/ NEFT.

Document can be downloaded from our website www.creda.co.in or from Chhattisgarh e-Procurement portal i.e. https://eproc.cgstate.gov.in

# CHATTISGARH STATE RENEWABLE ENERGY DEVELOPMENT AGENCY

## CONTENTS

NIT Ref. No. 8616/CREDA/SCIP & IGGY/RE-VI/2022 Date : 29.07.2022

# NOTICE INVITING BID

CREDA invites online Bids for Survey, design, supply, installation, and commissioning of Solar Community Irrigation Scheme & Indira Gaon Ganga Yojana and with all allied works with five years COM, onsite warrantee for anywhere in the State of Chhattisgarh from registered System integrators of CREDA for SPV Projects with 3 years consistent record in Solar Pumping system as per following details –

| Item Description | Approximate Area (Hectare) | Cost of Bid Document | EMD | Essentials* |
|---|---|---|---|---|
| Survey, design, supply, installation, and commissioning of Solar Community Irrigation Project & Indira Gaon Ganga Yojana and with all allied works with five years comprehensive onsite warrantee, COM at anywhere in the state of Chhattisgarh. | 10,000 | **₹ 10,000/- + 18% GST = ₹11,800/-** | **₹ 10,00,000.00** | As per clause no. 1A to 1G of Eligibility Criteria (**Page no.8**) |

The approximate area of project mentioned in above table is based on target/ work that are expected to be given by various agencies to CREDA within the period of two years.

**Estimated Value of tender:- Rs. 100 Crores.**

**Important Events and time schedule for this tender are as follows –**

| Particulars | From Date & Time | To Date & Time | Place |
|---|---|---|---|
| Date of issue of notice inviting bid | **29-07-2022 05:00 pm** | **----** | ----- |
| Period of availability of bidding document at website | **29-07-2022 05:00 pm** | **25-08-2022 05.00 pm** | http://www.creda.co.in/Tender http://eproc.cgstate.gov.in |
| Submission of Pre Bid queries in writing | **29-07-2022 05:00 pm** | **08-08-2022 05:00 pm** | To be submitted hard copy at CREDA, HO Raipur or through email at credatendercell@gmail.com |
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| Evaluation of technical bid and Declaration of Eligible Bidder | **29-08-2022 12:00 PM Onwards** | | At Vikas Bhawan, PMGSY, Conference Hall, Civil Lines, Raipur |
| Opening of e- Price Bid (The financial Part of the bid – bidders who qualified in technical bid) | **31-08-2022 12:00 PM Onwards** | | At Vikas Bhawan, PMGSY, Conference Hall, Civil Lines, Raipur |

Technical Bid and Price Bid shall be submitted online only at https://www.eproc.cgstate.gov.in. However Technical Bid (as per the checklist) also has to be submitted duly signed hard copy at CE (RE-V). If there is any discrepancy in the e-Bid and hard copy only the e-bid shall be valid. **In no case the hard copy of documents shall be evaluated, they are only for record keeping by CREDA**. Bidders are advised to follow the instructions provided for Registration and e-Submission process accordingly. (For any query about e-bidding please visit user manual at https://www.eproc.cgstate.gov.in)

Details of this tender are mentioned at Tender Documents which can be downloaded from our website www.creda.co.in**.**

**The Biddershall have to deposit tender document cost along with EMD as mentioned above through demand draft/RTGS/NEFT payable to CREDA Raipur while submitting tender.**

Bidders are requested to submit their suggestions/objections/reservations, if any with details so as to avoid any confusion and to ensure clarity and transparency regarding the tender in writing or by e-mail.

Any Addendum/Corrigendum/AmendmentNotice, if needed, shall be uploaded on CREDA's Website.

CREDA reserves all rights to accept/reject any or all tenders in full/part without assigning any reasons.

**Chief Engineer**
**RE-V, H.O. CREDA**
**Raipur (CG)**

## CHECK LIST OF DOCUMENTS TO BE UPLOADED IN THE E-BIDDING PORTAL

To ensure that your Bid uploaded on the Chhattisgarh e-Procurement portal i.e. https://eproc.cgstate.gov.in is complete in all respects, please go through the following checklist & tick mark for the enclosures attached with your Bid –

| Sl. No. | Envelope | Description of documents to be uploaded in the e-bidding portal | Complied (Yes/ No) | (Page No) |
|---|---|---|---|---|
| 1 | **A. Pre-Qualification** | EMD and Tender Document Fee submission form of the bidder confirmed by CREDA (as on page – 7) | | |
| 2 | | Scanned Copy of Undertaking of the Bidder as mentioned on Page – 8 of the tender document on the letter head of bidder | | |
| 3 | | Scanned copy of original tender document duly signed & with stamp on each page, as a confirmation of acceptance of the Terms & Conditions (T&C). | | |
| 4 | | PAN, GSTIN issued in the name of the bidder | | |
| 5 | | Self-certificate from Bidder on not being a debarred from Government contract or a blacklisted company. | | |
| 6 | | Consortium Agreement along with MoU and Power of Attorney (If Applicable) **(Annexure II)** | | |
| 7 | | Declaration of conflict of interest - by bidder about any relatives working with CREDA and Affidavit **(Annexure VI)** (Hard Copy to be submitted as per Clause 5d, Section – 1) | | |
| 8 | | Copy of Registration: Certificate as System Integrator of CREDA in SPV Program valid at the time of submission of bid | | |
| 9 | **B. Technical and Financial Qualification** | Consent for valid Original Test Reports of SPV Pumping system & MAF from the owner of test report in the name of Bidder. | | |
| 10 | | Original Net Worth Certificate duly signed by Chartered Accountant as on 31st March 2021. | | |
| 11 | | Original certificate for last threefinancial year's turnover i.e. 2018-19, 2019-20& 2020-21/2021-22 of works done in SPV Projects. | | |
| 12 | | Original ITRs for last three Financial Years i.e. 2018-19, 2019-20& 2020-21/2021-22 of the Bidder. | | |
| 13 | | Completion and Experience Certificates of Installation and Commissioning of SPV Pumps by the Bidder in Govt. Scheme of any State or Market mode scheme of CREDA in last 3 financial years i.e. 2019-20, 2020-21, 2021-22 & till 30.06.2022.**(Annexure-I, Part A, B,C)** | | |
| 14 | | Proof of being Eligible manufacturer of SPV-Pumps/ Controller /Structure etc. of SPV irrigation pumping system. | | |
| 15 | | Manufacture Authorization certificates of all components of SPV irrigation pumps. | | |
| 16 | | Technical Data Sheet for each component showing full technical details. | | |
| 17 | | Declaration for using same make of equipment's as per the test certificate.**(Annexure – X)** | | |
| 18 | **C. Scanned copy of Price Bid** | Duly filled scanned copy of price bid (Part A, B & C). To be mandatorily attested by the bidder. | | |

**Note:** Bidders shall have to submit the original hard copies of the above mentioned documents as described in Section – 1; Clause 5(d).

# Details of EMD and Tender fee attached

| | |
|---|---|
| Tender No. and Date | |
| Name of the Bidder | |
| Bidder's Bank Account Details | |
| (i) Name of the bank | |
| (ii) Branch | |
| (iii) IFS Code | |
| (iv) Account No. | |
| (v) Transaction reference number | EMD - _____ ; Bid Document Fee - _____ |
| (vi) Date of transaction | EMD - _____ ; Bid Document Fee - _____ |
| (vii) EMD | Rs. ……..…./-<br>In Words (Rs……) |
| (viii) Bid Document Fee | Rs. ……..…./-<br>In Words (Rs……) |

| | |
|---|---|
| Name | CREDA |
| Bank & Branch Name | ICICI Bank, Panchpedi Naka, Raipur |
| Bank Account Number | 134601000400 |
| Branch IFS Code | ICIC0001346 |

**(Sign & Seal of the bidder)**

***NOTE –**

1. The EMD and the Tender Document Fee shall have to be deposited as mentioned in the NIT in CREDA's bank account (amount mentioned above). Bidder shall have to upload the transaction details as above or a scanned copy of the DD (if transaction is done through DD)
2. In case the transaction is done through DD, the original DD has to be submitted in envelope A as per Clause 5(d).

# UNDERTAKING OF THE BIDDER

## (To be submitted on Letter Head)

I/We have read carefully and examined the notice inviting Bid, schedule, General Rules and terms and conditions of the contract, special conditions, Schedule of Rates and other documents and Rules referred to in the Bid document for the supply.

I/We hereby Bid my rates for the execution of the work for CREDA as specified within the time stipulated in the schedule in accordance with all aspects with the specifications, designs, drawings and instructions with such conditions so far as applicable.

I/We agree to keep the Bid valid for **One Hundred Eighty (180) days** from the due date of submission thereof and not to make any modifications in its terms and conditions.

A sum of **Ten Lacs is** hereby forwarded as **Earnest Money** in the form of crossed demand draft / RTGS / NEFT payable to CREDA at Raipur (C.G.). If I/We, fail to commence or complete the sanction ordered in specified time or fail to fulfil the any condition of Bid document, I/We agree that the CREDA shall, without prejudice to any other right or remedy, be at liberty to forfeit the said Earnest Money absolutely. The said Earnest Money shall be retained by CREDA towards security deposit to execute all the works referred to in the Bid documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be required by CREDA.

I/We hereby declare that I/We shall treat the Bid documents, specifications and other records connected with the work as secret/confidential and shall not communicate information derived there from to any person other than a person to whom I/We have authorized to communicate the same or use the information in any manner prejudicial to the safety of CREDA/Government.

I/We shall abide to all the laws and shall be responsible for making payments of all the taxes, duties, levies and other Govt. dues etc. to the appropriate Govt. departments.

Our GST Registration No._____. The PAN No. under the Income Tax Act is _____.

I/We shall be responsible for the payment of the respective taxes to the appropriate authorities and should I/we fail to do so, I/we hereby authorize CREDA to recover the taxes due from us and deposit the same with the appropriate authorities on their demand.

Dated:

Place:

**Signature**

**Name of Bidder with seal .....**

**Witness :**

Signature: .....

Name: .....

Postal Address: .....

.....

# SECTION - 1

## INSTRUCTIONS FOR BIDDERS

### 1. ELIGIBILITY CRITERIA :

**a. TEST REPORTS OF SPV PUMP**

i. Bidder must have either Test Report in his name or written consent from owner (manufacturer of SPV Module/Pump/Controller only) of the test report to use such test certificate/reports for each of the four types of pump i.e. 7.5HP, 10HP, 15HP and 20 HP solar AC surface pumping system with solar modules. All test reports are mandatory for eligibility to participate in the tender. Such owner of the Test Reports must have to provide the Original Test Report to CREDA, on or before the date of sample display, for which they are providing consent or using the same.

**Note:** In case, the bidder, in future wishes to change components such as module and/or pump/controller **OR** the system configuration as a whole, then they must take prior approval from CREDA in addition to the submission of valid original test report of such a configuration along with written consent of owner (manufacturer of SPV Module/Pump/Controller only). CREDA reserves the right to accept or reject the modified configuration of SPV Irrigation Pumps.

ii. Bidder shall have to produce original test certificate(s) (in addition to the documents submitted in hard copy as per Clause 5(d)) for the bidding pumps at the time of opening of technical bid.

**b. MINIMUM EXPERIENCE:**

Bidders must have minimum experience under Government or Market Mode Schemes for at least three consecutive financial years excluding current Financial Year i.e. FY 2019-20, FY 2020-21 and FY 2021-22 till 31-03-2022 as per the details mentioned below:

| S.N. | Bidding for Capacity of SPV Water Pump | Minimum Experience required |
|---|---|---|
| 1 | Survey, design, supply, installation, and commissioning of Solar Community Irrigation Project & Indira Gaon Ganga Yojana and with all allied works with five years comprehensive onsite warrantee, COM at anywhere in the state of Chhattisgarh. | **a. 300 Nos. of 3HP** & above Solar pumps.<br>**b. 1000 cu.m** of civil construction (RCC) work under Solar Water Supply Scheme.<br>**c. 3000 Mtr. Water Delivery Network** under Solar Water Supply Scheme.<br>**OR**<br>Direct experience of Supply, Installation & Commissioning of **2 nos turnkey project under Solar Community Irrigation Projects of minimum aggregate area of 50 Hect**. |

**c.** Bidders will have to submit experience of certificates in form of satisfactory commissioning and functioning report containing complete system details from the concerned state/central agencies /department document issued by competent authority duly sealed and signed along with bid document. Experience certificate shall be submitted in attached format (as per **Annexure – I Part A, B, C)** or other format containing similar information shall be considered only in-case submitted in Hindi / English Language only. At the time of opening of technical bid, bidders shall have to present original reports/certificate as above.

**d.** Bidders must have a Positive Net worth Positive Net worth (Positive Net Worth means "Net value of the Assets minus (-) Net value of liabilities") of Rs. 50 lacs as on 31st March 2021/31st March 2022. They shall have to submit an Original Certificate duly signed by a qualified and registered Chartered Accountant having UDI number as a proof. Produced certificate must tally with the audited balance

sheet.

**e.** Bidders should have an aggregate turnover of minimum Rs. 05 Crores in last three consecutive financial years i.e., FY 2018-19, FY 2019-20, FY 2020-21/FY 2021- 22 in SPV Projects. Certified copies of the annual returns and audited balance sheet submitted to the Registrar of Companies/ Income Tax Authorities should be enclosed. For the preceding years, an original Summarised Sheet of turnover certified by registered CA must be enclosed. In case of FY 2021-22 Bidder are allowed to submit provisional balance sheet, ITR, Turnover and Net-worth Certificate. CREDA reserves the right to call for these documents from such bidders anytime during the validity of the bid.

**f.** Bidder who are debarred from bussiness by Govt./Govt. Agency in any state would not be eligible to participate in this Bid. A self-declaration should be submitted by the Bidder to this effect, failing which Bid shall be rejected.

**g.** Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

i. Made misleading or false representations in the forms, statements, affidavits and attachments submitted in proof of the qualification requirements; and/or

ii. Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion litigation history, or financial failures etc; and/or

iii. Participated in the previous bidding for the same work and had quoted unreasonably high or low bid prices and could not furnish rational justification for it to CREDA.

## 2. CONSORTIUM–

There shall be consortium for the contract bid in the constituent firm indicating clearly, amongst other things, the proposed distribution of responsibilities, both financial as well as technical for execution of the work amongst them. For the purpose of this clause the most experienced partner shall be the lead partner. The copy of the consortium agreement in accordance with the requirements mention in **Annexure-II**. Lead partner shall be nominated as being partner-in-charge and this authorization shall be evidenced by submitting a Power of Attorney signed by second partner. Consortium shall be allowed in this tender upto two partners submitted to fulfilling criteria:-

**a.** The term Bidder used hereinafter would therefore apply to both as single entity and as Consortium. Consortium of companies/organizations/bidders (maximum of two members) registered in India and must be in existence for at least 3 (three) years as on publication of this tender. Both the partners should have at least 3 (three) years' experience in the field of installation of solar pumping systems.

**b.** A consortium of maximum two (02) members is allowed in this bid including one as lead bidder.

**c.** One of the partners of the consortium shall act as Lead member. Both the members of the Consortium shall mandatorily have installation experience of SPV pumping system such as Irrigation pumps and Drinking Water pumps.

**d.** Both the partners should individually fulfil criteria of 1d, 1f and 1g.

**e.** Both the partners should jointly fulfil eligibility criteria as per clause 1a, 1b, 1c and 1e.

**f.** Member of any Consortium Firm shall not be permitted to participate either in individual capacity or as a member of any other Consortium in the same tender. Submission or participation in more than one bid will cause disqualification of all the bids submitted by the bidder.

**g.** All formalities in respect of submission of tender shall be done only in the name of 'Lead Member' and not in the name of consortium. However, name & other details of both the members of Consortium should be clearly mentioned in the bid.

**h.** Both the partners of consortium shall mandatorily have minimum 3 (three) years installation experience of SPV Pumping System such as irrigation pumps and drinking water pumps.

**i.** The lead partner of consortium shall be solely responsible for any liability, penalty, insurance, CMC and other terms and conditions mentioned in this Tender Document. In event of default by any partner in the execution of his part of contract, both the partners shall be debarred form the tender, execution of work and empanelment list of CREDA.

**j.** Notwithstanding the permission to assigning the responsibilities of defaulting partner above, both the partner of consortium will retain the full and undivided responsibility for the performance of their obligation under the bid.

**k.** Both the partner shall be registered in CREDA. Otherwise consortium bid/bidders shall be disqualified.

**l.** The bid submitted shall include all the relevant information mentioned in this tender document applicable to consortium partner shall be furnished separately for each partner like affidavit as in **Annexure-III** mentioning information of relatives, Experience certificate, **Schedule- I,II,III,IV** etc. In case of fails to do, bid shall be rejected.

**m.** A copy of Memorandum of Understanding (MoU) certified by Magistrate/Sub-Judge/ Notary Public on 100 Rupees stamp paper, executed between the members of Consortium shall be submitted along with the tender. The complete details of the members of the consortium, their share and responsibility in the Consortium etc. particularly with reference to financial, technical and other obligations shall be furnished in the MoU.

**n.** Once the bid is submitted, the MoU shall not be modified / altered/ terminated during the period of execution including any extension thereafter by CREDA or validity of any letter of award awarded to the said Consortium. Incase, the Bidder fails to observe/comply with this stipulation, the full Security Deposit shall be liable to be forfeited.

**o.** A duly notarized agreement, attested by Magistrate/Sub-Judge/ Notary Publicon 100 Rupees stamp paper, of Consortium shall be executed between the 'Lead Member' and Consortium partner. This Agreement should be submitted in original with bid.**(Annexure-II)**

**p.** Copy of the original Memorandum of Understanding (MoU) as stated in clause 2(m) and original copy of agreement as stated in clause 2(o) shall be submitted separately. In absence of any of each shall lead to disqualification from the bid.

**q.** Duration of MoU and Consortium Agreement shall be valid during the entire execution period/ validity of letter of award and any extension thereafter/currency of the contract including the period of extension, if any.

**r.** Any change/modification in constitution of Consortium Firm shall not be allowed. Members of the consortium are not allowed to enter into separate consortium(s) with other companies/organisations/ bidders to participate in other bids of CREDA as long as this bid is valid.

**s.** Splitting of EMD/fees among the members of Consortium shall not be permitted.

**t.** Members of the Consortium Firm shall be jointly and severally liable to CREDA for execution of the project/ Work/ Assignment/ attending meetings/Review for the allocated works etc. The Consortium members shall also be liable jointly and severally for the loss, damages caused to the CREDA during the course of execution of any awarded contract or due to non-execution of the contract or part thereof. Governing Laws for ConsortiumFirm: The Consortium Agreement in all respect be governed by and interpreted in accordance with Indian Laws.

**u.** After successful completion of work, experience certificate shall be given by CREDA in accordance with percentage of participation as mentioned in consortium agreement.

**All correspondence by CREDA shall be done with the 'Lead member' of Consortium only.**

## 3. BIDDING PROCESS -

For ease of accessing the e-bidding website and registration the following is to be done by bidder -

**a.** Visit https://eproc.cgstate.gov.in

**b.** **Prospective bidders are requested to download, read and understand the Manuals present on the website so as to clearly understand the bid submission process.**

**c.** The user will be directed to e-bidding page where all information regarding registration is available along with helpline details.

**d.** Technical bid and Price Bid shall be submitted online only at https://eproc.cgstate.gov.in latest by **05:00 PM on 25-08-2022**. Bids submitted after scheduled time and date shall not be considered.

## 4. EMD & TENDER DOCUMENT FEE–

Earnest Money Deposit of **Rs. Ten Lakhs** submitted in the form of Demand Draft/Pay Order or RTGS/NEFT as mentioned in the **NIT** vide no. **8616/CREDA/SCIP&IGGY/RE-VI/2022 Dated: 29-07-2022,** EMD submitted in any other form e.g. **Cash/Bank Guarantee/FDR /TDR etc. shall not be accepted.**

## 5. SUBMISSION OF DOCUMENTS -

**a.** All the documents including technical and financial Bid should be submitted online on Chhattisgarh e-Procurement portal https://eproc.cgstate.gov.in as per the items mentioned in the Checklist on page no.06 in this bid.

**b.** Bidders are advised to finish all the bidding portal related activities such as registration, USB certificate/token approval, and payments etc. well in advance so as to avoid last minute difficulties during the bid submission.

**c.** Bidders are also advised to make themselves fully aware with the bid submission mechanism to avoid last minute hassles and doubts during bid submission. CREDA shall only entertain genuine technical issues/glitches, provided that the bidder submits evidence regarding the same.

**d.** Additionally, the bidders shall also have to submit all the documents, in hard copy, as required in this bid as per the checklist on **page 06** during the opening of Technical Bid, Date **26-08-2022, Time 05.00 PM.** Bidders shall have to submit only the documents as per the checklist in the following envelopes

- Envelope A – Pre Qualification Documents
  (Original DD should be submitted in this envelope)
- Envelope B – Financial Qualification Documents.
  (GST, PAN, Networth, Turn-Over, ITR)
- Envelope C – Technical and Financial Qualification Documents.

**Note: The Envelopes mentioned above are only for submission sake only and must not be related with the Envelopes mentioned in the context of the Checklist on page – 6.**The documents submitted in original hard copy (offline) before CREDA officials must match with those submitted in the Chhattisgarh e-Procurement portal. Any document other than the uploaded document shall not be considered. CREDA's Bid committee will only evaluate the documents submitted on Chhattisgarh e-Procurement portal. In no case the hard copy of documents shall be evaluated, they are only for matching the authenticity of the documents uploaded in the e-bidding portal.

## 6. SPECIFICATION AMENDMENTS –

**a.** The specifications of SPV Modules, Pumps, Pump Controller, and Structures including foundation etc. should be as specified in this bid. If any amendments are issued by CREDA in due course of time, in this context, then those shall be applicable under this bid.

**b.** CREDA reserves the right to amend or change minor specifications of the entire or any component of SPV pumping system even after the issuance of sanction order as per the site conditions and demand

## 7. GST & PAN –

Bidder shall have to submit copies of GST registration number and PAN numbers issued by the appropriate authority.

## 8. THE BID -

**a.** The Pre-Qualification, Technical-Financial Qualification Documents and Price Bid, other related documents must be uploaded in the portal i.e. https://.eproc.cgstate.gov.in from **05:00 PM dated 29-07-2022** to **05:00 PM dated 25-08-2022**

**b.** Nobody is authorized to receive or grant receipt for Bid delivered on behalf of CREDA. Bid received through any other mode shall not be considered and shall be rejected.

## 9. ANALYSIS OF RATE –

Bidder should quote their rates considering variation of site conditions and all other factors in price of different components and keeping the quantum and quality of work in mind.

## 10. REGISTRATION OF BIDDER –

Bid shall be rejected of all those bidders who are not registered with CREDA at the time of submission of bid.

## 11. VALIDITY -

Full descriptive particulars and complete specifications should accompany the offer. Offers should be kept open for acceptance for at least **180 days** from the date of opening. After finalization of this Bid the approved rates shall be valid till **Two Year** from the date of award; however CREDA shall have liberty to increase or decrease this validity if needed.

## 12. TERMS & CONDITIONS -

**a.** The terms, conditions and specifications mentioned in Bid document shall be binding on the Bidders and no condition or stipulation contrary to the conditions shall be acceptable. It may please be noted that the Bidders who do not accept terms and conditions stipulated in this Bid documents, their offers shall be liable to be rejected out-rightly without assigning any reason whatsoever.

**b.** Each page of Bid document & enclosures shall be signed by the Bidder and seal affixed. All the pages of the documents issued must be submitted along with the technical offer. In case of any corrections / alterations in the Bid, the Bidder should attest the same; otherwise Bids may not be considered.

**c.** **Bidders are also instructed to submit their Bids in properly arranged manner (with index, proper paging and with flags on important documents). Incomplete, lose, conditional or improper arranged Bids will not be accepted.**

## 13. CREDA RESERVES THE RIGHT -

**a.** To reject or accept any or all Bids fully or partly without assigning any reason on the grounds considered advantageous to CREDA, whether it is the lowest Bid or not.

**b.** To split the quantities against the Bid further for the same items/work. No reason will be assigned by CREDA for this and will be binding on the Bidders.

**c.** To increase or decrease of aggregate quantities as per discretion or circumstances.

**d.** Due to large quantum of work & limitation of the time period for completion of the work CREDA may, if required, take consent from other eligible Bidders if they agree to work on rates approved by CREDA.

**e.** CREDA may undergo agreement with those eligible Bidders who give consent to work on rates standardized by CREDA and may allocate work to them. Rates approved through this Bid may be standardized for all eligible Bids to work in year 2022-23 & 2023-24 and shall be valid till 31-03-2024. However CREDA reserves right to curtail or extend this period.

**f.** CREDA reserves the right to amend or change minor specifications of the entire or any component of Solar Community irrigation Project & Indira Gaon Ganga Yojana with all allied works even after the issuance of sanction order as per the site conditions and demand.

## 14. COMMUNICATIONS -

**a.** All the communication between Bidder and CREDA shall be in writing. Notice sent by Fax or other Electronic means shall be effective on confirmation of the transmission. Notice sent by registered post or speed post shall be effective of delivery or at expiry of normal delivery period as under taken by Postal Service.

**b.** Offers through Telegraph/Fax/Emails/Post/Courier or open offers etc. received shall be summarily rejected.

## 15. BID DOCUMENT FEE AND EARNEST MONEY DEPOSIT -

**a.** Each Bidder should submit Bid Document Fee and earnest money in the form of Demand Draft/Pay Order or RTGS/NEFT. Each bidder should submit Tender Document Fee and Earnest Money Deposit (EMD) in the form of RTGS/NEFT as single transaction only as mentioned in the Bid No **105525/CREDA/SCIP&IGGY/RE-VI/2022 Dated: 29-07-2022**.

**b.** **Bid** Document **Fee and EMD submitted in any other form e.g. Cash/Bank**

**Guarantee/FDR/TDR etc. shall not be accepted.**

## 16. SUBMISSION / DISPLAY OF SAMPLES -

a. Prospective bidders are allowed to provide Original Manufacturer Authorization Form (MAF) in manufacturer's letter head issued for this tender for major components of Solar Community irrigation Project & Indira Gaon Ganga Yojana & Consent for Test Report as per clause-1a only from registered manufacturer/vendor in CREDA at the time of sample display as well as in the technical bid, if the components as per the test report is already submitted by manufacturer/vendor.

b. Owner (manufacturer of SPV Module/Pump/Controller only) must have to submit the original test report to CREDA.

c. In case there is any component not displayed by Manufacturers/Vendors, bidders shall have to display these samples separately and also submit original Test Report to CREDA for the same.

d. CREDA shall examine the samples displayed either by bidder himself or by manufacturers and issue Sample Verification certificate to individual bidders. The bidders shall have to mandatorily upload this certificate in addition to manufacturer authorization in the e-technical bid.

e. If Owner (Manufacturer/Bidder) of the Test Report provides any false/fake information or documents, then they shall be debarred/blacklisted for 03 years for participation of any activity of CREDA and their EMD will be forfeited and registration in CREDA shall be cancelled.

## 17. PRE-BID QUERIES -

a. All suggestions, doubts, confusion, request, queries etc., shall have to be presented to CREDA in writing or through email to credatendercell@gmail.com or before **08-08-2022 till 05:00 PM** . After that any representation in this regard shall not be considered.

b. The purpose of pre-bid queries is to clarify issues and questions related to this tender that can be raised at that stage. Any amendments in the bid documents which may become necessary as a result of pre-bid queries received shall be part of original Bid document and communicated through corrigendum on CREDA website (www.creda.co.in) and on Chhattisgarh e-Procurement Portal https://eproc.cgstate.gov.in.

## 18. TECHNICAL CRITERIA –

a. **TEST REPORTS OF SPV PUMPS**

i. Bidder must have either Test Report in his name or written consent from owner (manufacturer of SPV Module/Pump/Controller only) of the test report to use such test certificate/reports for each of the four types of pump i.e. 7.5HP, 10HP, 15HP and 20 HP solar AC surface pumping system with solar modules. All test reports are mandatory for eligibility to participate in the tender. Such owner of the Test Reports must have to provide the Original Test Report to CREDA, on or before the date of sample display, for which they are providing consent or using the same.

**Note:** In case, the bidder, in future wishes to change components such as module and/or pump/controller **OR** the system configuration as a whole, then they must take prior approval from CREDA in addition to the submission of valid original test report of such a configuration along with written consent of owner (manufacturer of SPV Module/Pump/Controller only). CREDA reserves the right to accept or reject the modified configuration of SPV Irrigation Pumps.

ii. Bidder shall have to produce original test certificate(s) (in addition to the documents submitted in hard copy as per Clause 5(d)) for the bidding pumps at the time of opening of technical bid.

b. The Bidder should have sufficient technically qualified and well-experienced manpower for execution of the project and after sales service of the systems. These details may be called by CREDA and in case there is any deficiency found the Bidder may be debarred.

c. Bidders who are debarred from business by Govt. /Govt. Agency in any state would not be eligible to participate in this bid. A self-declaration should be submitted by the bidder to this effect, failing which bid shall be rejected.

d. Financial bid of those Biddders will not be opened who have not submitted valid test reports.

## 19. FORFEITURE OF EARNEST MONEY DEPOSIT -

It should be clearly understood that in the event of Bidder failing to enter into the agreement in the prescribed format on their quoted rates and also fails to execute assigned works under any Scheme of CREDA, within stipulated time, if he is so communicated within the validity period of the offer, the full amount of earnest money will be forfeited and Bidder shall be debarred from future business with CREDA including future participation in all bids up to three years. CREDA's decision in this regard will be final and binding on the bidders.

## 20. PRICE OF SUPPLY OF SOLAR COMMUNITY IRRIGATION PROJECT & INDIRA GAON GANGA YOJANA WITH ALL ALLIED WORKS WITH INSTALLATION, COMMISSIONING AND TESTING -

a. The Price quoted for Solar Community irrigation Project & Indira Gaon Ganga Yojana with all allied works with installation, commissioning and testing of SPV Modules, Structure, Pump & Pipes, Civil works, Fencing and all other required BOS etc. with 5 years system warranty, CMC. The GST shall be paid extra as per prevailing rate (**GST notification no. 24 /2018-Central Tax (Rate) dated 31.12.2018 & notification no. 8/2021-Central Tax (Rate) dated 30.09.2021**.) The prices shall be filled exactly as per **e-Price Bid enclosed.**

b. Any change in GST shall be become applicable during the period of contract.

c. **Payment of GST according to GST prevailing rate applicable at the time of opening of bid or else the date of installation of solar pumping systems, whichever is less, shall be applicable in addition to the base price**.

d. In this regard if there is any change in the composition ratio of goods and services by any Authority/ Courts, same shall be applicable.

e. **There shall be no escalation of rates under any circumstances.**

## 21. ENGINEERING DOCUMENT -

Bidders will have to submit Engineering Documents with technical details, drawings, Specifications of components and make etc. to CREDA for approval, as and when asked by CREDA. Works may only be started out only after approval of the Engineering Document and their samples.

## 22. COMPREHENSIVE MAINTENANCE CONTRACT (CMC)–

**Comprehensive Maintenance Contract shall have two distinct components as described below -**

**a. Preventive / Routine Maintenance:** This shall be done by the contractor at least once in every three month and shall include activities such as cleaning and checking the health of the SPV Pump, cleaning of module surface, tightening of all electrical connections, and any other activity that may be required for proper functioning of the SPV Pump as a whole.

**b. Breakdown / Corrective maintenance:** Whenever a complaint is lodged by the user/CREDA, the **bidder** shall attend to the same within a reasonable period of time (not exceeding 07 days from the date of complaint) and rectify the defects, period. Replacement of the defective component/ spares if required as and when such requirement would arise. The replacement work shall be carried out within the specified time limit i.e. maximum 7 days for minor replacement/repair and 15 days for major replacement/repair. It is mandatory that the contractor shall submit a certificate, about the rectification/replacement work done, from the concerning beneficiary(s) to the DO, failing which it will be assumed that the contractor has not performed its duties. Major and minor replacement/repair shall be defined by CREDA separately.

For carrying out the maintenance service during CMC effectively, the System Integrator shall establish one local service center at suitable place (preferableat the same district).

**c.** Facilities at the local Service Center: The bidder shall maintain the following facilities at the Local Service Centre for ensuring highest level of services to the end user:

i. Adequate trained manpower specifically trained by the bidder for carrying out the service activities.
ii. Sufficient spare parts, to extend services at the beneficiary's place / site(s).

d. The System Integrator shall submit certificates of maintenance / quarterly visits in the enclosed format (**Annexure- IV**) to respective DOs on quarterly basis, along with theservice reports.
e. If the bidder fails to repair the systems against the complaints of breakdown /Corrective maintenance to ensure 100% working status during CMC period in stipulated period i.e. maximum 30 days. Repair / replacement work will be done by CREDA from their SD or any other due payments available with CREDA.
f. A detailed methodology stating the plan to undertake the work of Maintenance Contract, proposed network of service centers should be submitted at the time of Contract.

## 23. SAMPLES -

If required, samples of the components shall have to be submitted to the CREDA in prescribed manner after receipt of notification of CREDA for testing, verification purpose without any additional cost.

## 24. INSPECTIONS -

CREDA reserves right to inspect the material at Godowns / Temporary Stores before dispatch and also at works sites.

## 25. MANDATORY DEDUCTION -

This deduction is the one percent of cost of installation only and it is mandatory to deposit to concerned department as per state govt. notification. So while quoting the financial bid, keep this in mind.

## 26. CORRUPT OR FRAUDULENT PRACTICES-

**a.** The CREDA requires the Bidder/SI to strictly observe the laws against fraud and corruption in force in India, namely, Prevention of Corruption Act, 1988.
**b.** It is required that each Bidder/SI (including their respective officers, employees and sub-contractors) adhere to the highest ethical standards, and report to the Government/ Department all suspected acts of fraud or corruption or coercion or collusion of which it has knowledge or become aware, during the tendering process and throughout the negotiation or award of a contract.

## 27. MANDATORY EMPLOYMENT -

Qualified diploma engineer with minimum wage rupees 15000/- per month for works above rupees 20 lacs and qualified graduate engineer with minimum wage rupees 25000/- per month for works above INR 01 crore shall have to be deployed by the System Integrator. (As per CG Govt.'s order no. F7-17/2020/1-6 Dated 02.12.2020).

## 28. TAX OBLIGATIONS -

CREDA shall deduct TDS for Income Tax & applicable cess on Civil Work etc. under various acts and deposit with the appropriate authority. Costs and taxes before execution of agreement with CREDA so as to ensure tax deposition as per Government Rules accordingly.

## 29. JURISDICTION OF THE COURT -

Any dispute arising out of the contract shall be subject to the jurisdiction of Hon'ble High Court of Chhattisgarh.

# SECTION - 2

## GENERAL CONDITIONS OF CONTRACT

### 1. DEFINITIONS -

In writing General Conditions of Contract, the specifications and bill of quantity, the following words shall have the meanings hereby indicated, unless there is something in the subject matter or content inconsistent with the subject.

a. **CREDA** shall mean the Chhattisgarh State Renewable Energy Development Agency represented through the Chief Engineer.

b. **Work** shall mean any **work** entrusted to the Bidder as mentioned in the scope of work and sanction order.

c. The **"Engineer in charge"** shall mean the Engineer or Engineers authorized by CREDA for the purpose of this contract. Inspecting Authority shall mean any Engineering person or personnel authorized by CREDA to supervise and inspect the erection of the Solar Community Irrigation Project & Indira Gaon Ganga Yojana with all allied works.

d. **"The Eligible SI/Bidder"** shall mean the Bidder awarded with the contract or their successors and permitted assigns. Contract Price shall mean the sum named in or calculated in accordance with the provisions of the contract as the contract price. General Conditions shall mean the General conditions of Contract.

e. **"Specifications"** shall mean the specifications annexed to these General Conditions of contract and shall include the schedules and drawings attached thereto or issued to the eligible SI from time to time, as well as all samples and pattern, if any,

f. **"Month"** shall mean calendar month. "Writing" shall include any manuscript, typewritten, printed or other statement reproduced in any visible form whether under seal or written by hand.

### 2. PROOF OF MANUFACTURER -

Those bidders who are also manufacturers of an important component of Solar Pumping Systems such as SPV Modules, Solar Pumps, Controllers and **pipes (UPVC and HDPE pipes as per technical specifications under this bid)** shall have to submit proof of their manufacturing unit, appropriate registration documents and list of Machineries and Equipment's.

### 3. CONTRACT DOCUMENT -

The term "Contract" shall mean and include the General conditions, specifications, schedules, drawings and work orders etc., issued against the contract schedule of price or their final general conditions, any special conditions applying to the particular contract specification and drawings and agreement to be entered into. Terms and conditions not herein defined shall have the same meaning as are assigned to them in the Indian Contract Act or any other Act in vogue or by any person of common knowledge and prudence.

### 4. MANNER OF EXECUTION –

a. Execution of work shall be carried out under Government mode scheme of CREDA in an approved manner as outlined in the technical specifications or where not outlined, in accordance with desired Specifications laid down by CREDA, to the reasonable satisfaction of the Engineer.

b. Successful Bidder here-in-after called the **SI** (System Integrator).

   i. After receipt of LOI from CREDA the eligible SI shall conduct a detailed survey of site and submit site details and feasibility report in prescribed format. After due verification with signatures of Sarpanch or Sachiv of concerned Gram Panchayat. All necessary documents and survey details shall have to be submitted in concerned District Office of CREDA in prescribed manner.

   ii. SI shall also have to submit layout plan duly consented and signed.

   iii. Engineer-in-Charge of District Office of CREDA shall examine these reports. After his satisfaction will forward details with his recommendations to EE of Concerned Regional Office of CREDA. Engineer-in-charge may visit the site if he/she is not satisfied with survey report.

iv. In case Engineer-in-Charge of District Office of CREDA finds the site not suitable for installation of systems he/she will inform concerned beneficiary organisation / department accordingly and request for alternative site/necessary action.
v. Executive Engineer of concerned Regional Office, CREDA will decide the technical feasibility and layout plan of site. Executive Engineer may visit the site if he/she is not satisfied with survey report.
vi. After satisfaction, Executive Engineer will forward the site clearance report with technical feasibility to Head Office, CREDA.
vii. Head Office, CREDA shall be final authority to approve or reject site finalisation recommended by Regional Offices.
viii. After issuance of LOI/Work Order(s), Executive Engineer of concerned Regional Office CREDA shall finally approve site layout in writing in prescribed format.
ix. The Vailidity of LOI is **18 months** from the date of issue of the LOI.
x. Concerned CE of CREDA, after his satisfaction, shall issue the work order to eligible SI for installation of systems under Solar Community Irrigation Project & Indira Gaon Ganga Yojana.
xi. LOI/Work order will be given to the chosen System Integrator only after execution of the agreement with CREDA.
xii. The SI shall start work within **15 days** after the date of sanction of work.

c. All the materials required for the installation of systems under Solar Community Irrigation Project & Indira Gaon Ganga Yojana as per Work Order issued shall be kept at site in the custody of the SI. CREDA shall not be responsible for any loss or damage of any material during the installation.
d. All the electrical works should be done as per various provisions of Indian Electricity Act. The persons engaged for carrying out electrical works should have a valid B-class license or above issued by licensing board of Chhattisgarh.
e. After work is started, CREDA will carry out inspections at various stages and Engineer-in Charge of District Office of CREDA shall record the measurements in the Measurement Book issued for the said site.
f. After installation, joint inspection will be done in presence of SI and CREDA and after successful commissioning of Solar Community Irrigation Project & Indira Gaon Ganga Yojana and its approval from CREDA, a JCC will be signed and the necessary documents shall be forwarded for payments as per the guidelines and procedures of CREDA.

## 5. VARIATIONS, ADDITIONS & OMMISSIONS -

CREDA shall have the right to alter, amend, omit, split or otherwise vary the quantum of work, by notice in writing to the SI. The eligible SI shall carry out such variation in accordance with the rates specified in the contract so far as they may apply and where such rates are not available; those will be mutually agreed between CREDA and the eligible SI.

## 6. INSPECTION -

a. The Engineer-in-Charge or his authorized representative(s) shall be entitled at all reasonable times to inspect and supervise and test during installation and commissioning. Such inspection will not relieve the eligible SI from their obligations under this contract.
b. Material can be inspected before dispatch or in transit by the authorized representatives of CREDA at the factory / godown at the cost of the eligible SI, if desired by CREDA.
c. CREDA may undertake real time performance and quality test of randomly selected Solar Community Irrigation Project & Indira Gaon Ganga Yojana with all allied works and components during the course of execution as per specifications and guidelines laid by CREDA to ensure quality and performance of system and components.

## 7. COMPLETION OF WORK -

Time being the essence of contract, the installation of the Solar Community Irrigation Project & Indira Gaon Ganga Yojana with all allied works shall be completed within the time schedule prescribed in the LOI/Work order.

## 8. ELIGIBLE SYSTEM INTEGRATOR'S LIABILITY IN CASE OF DEFAULT -

CREDA may by written notice of default to the eligible SI, terminate the contract in circumstances detailed hereunder -

a. If in the opinion of the CREDA, the eligible SI fails to complete the work within the time specified in the LOI/work order or within the period for which extension has been granted by CREDA to the eligible SI.
b. If in the opinion of CREDA, the eligible SI fails to comply with any of the provisions of this contract.
c. In the event of CREDA terminating the contract in whole or in part as provided in paragraph (a) above, CREDA reserves the right to engage another eligible SI or agency upon such terms and in such a manner as it may deem appropriate and the eligible SI shall be liable to CREDA for any additional costs or any losses caused to CREDA as may be required for the completion of erection of the Solar Community Irrigation Project & Indira Gaon Ganga Yojana and or for penalty as defined under this Bid document until such reasonable time as may be required for the final completion of the work. CREDA may debar such a defaulter SI for up to three years from taking participation in taking part in all activities of CREDA.
d. In the event CREDA does not terminate the contract as provided in paragraph (a) the eligible SI shall continue performance of the contract, in which case he shall be liable to CREDA for penalty for delay as set out in this clause 16 of section 02 in this Bid document until the work is completed.

## 9. FORCE MAJEURE -

The eligible Bidder shall not be liable for any penalty for delay or for failure to perform the contract for reasons of FORCE MAJEURE such as of God, acts of public, enemy, LWE problems, acts of government, cyclone, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes provided that if SI shall submit delay notice with appropriate cause of delay to the CREDA in writing within **15 days** of force majeure. CREDA shall verify the facts and may grant such extension as facts justify. Delay in supply of any accessories of Solar Community irrigation Scheme & Indira Gaon Ganga Yojana by the related vendors, to whom the Bidder has placed order, shall also not be treated as force majeure.

## 10. REJECTION OF WORKS -

In the event of any of the material supplied/work done by the eligible SI is found defective in material or workman ship or otherwise not in conformity with the requirements of this contract specifications, CREDA shall either reject the material and/or work and advise the eligible SI to rectify the same. **CREDA may impose penalty for such rejection up to the 200% cost of the entire system. Habitual/repeated offenders shall be black listed/debarred to participate in the any Bid/ Activity of CREDA till further orders.** The eligible SI on receipt of such notices shall rectify or replace the defective material and rectify the work free of cost. If the eligible SI fails to do so CREDA may -

a. At its option replace or rectify such defective materials and/or work and recover the extra cost so involved from the eligible SI plus **15%** service charges of the cost of such rectification, from the eligible SI and/ or terminate the contract for balance work/ supplies with enforcement of penalty **as stated above**.
b. Defective materials/workmanship will not be accepted under any conditions and shall be rejected outright without compensation. The eligible SI shall be liable for any loss/ damage sustained by CREDA due to defective work **with enforcement of penalty as stated above**.

## 11. EXTENSION OF THE TIME -

a. If the completion of installation is delayed due to any reason beyond the control of the eligible SI, the eligible SI shall without delay give notice to the CREDA in writing of his claim for an extension of time. CREDA on receipt of such notice may or may not agree to extend the contract/delivery date of the system as may be reasonable but without prejudice to other terms and conditions of the contract.
b. Chief Executive officer of CREDA has full rights for unconditional time extensions.

## 12. MAKES OF EQUIPMENT TO BE USED IN THE WORK -

a. The Solar Modules, Solar Pumps, Controller & Other BOS should be as per BIS/IEC/CE

standards.

b. The eligible SI has to ensure that equipment's are as per Technical Requirements of guidelines of CREDA as complied with. The material/works for which CREDA/MNRE or BIS or ISI specification is not available, engineer-in-charge of the works will examine and approve the material/works, preferably of all makes on which CREDA has report of satisfactory performance.

c. Manufacturer Authorization Form (MAF) on Manufacturer's Letter head of Solar Pump /Module /Pump controller/Structure/Other BOS which the SI is intending to use in the installation shall be submitted at the time of sample submission and the same shall be submitted with technical bid.

d. The SI shall ensure that all the major components of the Solar Community Irrigation Project & Indira Gaon Ganga Yojana such as Solar Modules, Solar Pump, Pump Controller, Pipes and Structure are procured from registered vendors of CREDA of respective components.

e. SI should submit warrantee agreement of at least 5 years for major components i.e. Pump, Controller, structures, pipe and at least 10 years warrantee for SPV Modules with manufacturer or distributors duly certified by the manufacturer before installation of the Solar Community Irrigation Project & Indira Gaon Ganga Yojana for any manufacturing defects or bad workmanship.

## 13. WARRANTEE PERIOD AND POST INSTALLATION SERVICES -

a. The work done/material supplied by the eligible SI should be warranted for satisfactory operation and against any defect in material and workmanship including Pump, Controller, Pipe and other balance of equipment's, at least for a period of **5 (five) years,** from the date of commissioning of system under the Solar Community Irrigation Project & Indira Gaon Ganga Yojana including other works as per scope of work.

b. Warrantee on SPV Modules shall be for **10 (ten) years** from the date of commissioning of the Solar Community Irrigation Project & Indira Gaon Ganga Yojana with all allied works must be warranted for their output peak watt capacity, which should not be less than **90%** at the end of **10 years** and not less than **80%** at the end of **25 years**.

c. The above warrantee certificates shall be furnished to the CREDA for approval. Any defect noticed during this period should be rectified by the supplier free of cost upon written notice from CREDA provided such defects may be due to bad workmanship or bad materials used.

d. The warrantee period shall be extended by the period during which the system remains non-operative due to reasons within control of the eligible SIs.

e. This warrantee must be an unconditional onsite warrantee and the eligible SI will have to replace the defective material within 7 **days** positively from the date of information given to him by CREDA.

f. Care should necessarily be taken to make Solar Community Irrigation Project & Indira Gaon Ganga Yojana operational, once the reporting of the fault/non-operational status is done, within **7 days**. If the systems installed under Solar Community Irrigation Project & Indira Gaon Ganga Yojana is not made operational within the stipulated time, CREDA may rectify the same at the cost of SI and the warrantee period shall be extended accordingly for delayed period.

g. System Integrators shall have to establish their service stations in the allocated area and shall have to keep sufficient quantity of spares and man power to ensure proper service network for taking care of smooth functioning of Solar Community Irrigation Project & Indira Gaon Ganga Yojana installed by them. SI shall have to give a toll free number to register complaints.

## 14. TERMS OF PAYMENT -

a. 40% of the total cost of the system after construction of entire pump platform and control room, fencing and supply & installation of Pump, module, controller, structure and system BOS.

b. 55% of the total cost after successful laying of pipeline for entire system, installation and commissioning of the system, after submission of JCC and insurance documents for five years in hard copy.

c. Balance 5% of the eligible payment excluding GST shall be retained by CREDA as Security Deposit for a period of 60 months from date of commissioning.

## 15. RATES FOR ADDITIONAL WORKS NOT IN SCHEDULE OF TENDER -

If during the course of execution, where it is found necessary that certain item/items of work not provided in the Tender such as Stone Pitching during work at the site required to be carried out then, on the basis of CG PWD and/or CG WRD Schedule of Rate (SOR) additional payment extra work shall be done by CREDA subject to recommendation of District In-charge and Executive Engineer of the concerned Regional Office.

## 16. PENALTY FOR DELAY IN COMPLETION OF CONTRACT -

a. If the eligible SI fails to complete the assigned work within the schedule time specified in the Work Order or any extension granted there to, CREDA will recover from the SI as penalty a sum of up to **Two per cent (2%)** of the system price excluding GST for every delayed system per month. For this purpose, the date of taking over shall be reckoned as the date of completion. The total penalty shall not exceed 5**% (Five Per cent)** of the cost.

b. Review of the progress of installation of Solar Community Irrigation Project & Indira Gaon Ganga Yojana allocated to SIs shall be done time to time by CREDA and if the progress of installation is found unsatisfactory, the allocation of entire remaining uninstalled system or their part of can be re-allocated to other SI as per discretion of CREDA.

## 17. SECURITY DEPOSIT (SD) -

a. 5% of the cost shall be retained as SD during the five years of warrantee period. No interest shall be payable on the SD.
b. Period for which SD is to be retained may be extended in case the warrantee period is extended due to non-performance of the system.
c. All costs of damages and delays for which the eligible SI is liable to the CREDA will be deducted from any money due to the eligible SI including the security deposit of any project under CREDA.

## 18. INSURANCE -

a. The eligible SI shall arrange insurance coverage for the materials and other components of Solar Community Irrigation Project & Indira Gaon Ganga Yojana and its all allied works at his/ beneficiary's custody for the work under execution and successful commissioning and subsequent handover to the beneficiary. The eligible SI shall take up insurance or such other measures for the manpower so as to cover the claim for damage/accident under workmen's compensation Act and other applicable State/Central laws. CREDA shall not bear any responsibility on this account.
b. Eligible SI shall arrange for insurance coverage for complete Solar Community Irrigation Project & Indira Gaon Ganga Yojana and its allied works during the CMC period i.e. for 05 year from the date of installation, at single instance (5 years insurance premium must be paid at the time of insurance). Insurance should cover for damage and theft. In case of such incidence, SI must replace the lost/damaged part within 7 days from the date of intimation, failing which the rectification/replacement (keeping the same configuration in consideration) will be done by CREDA at the risk and cost of system integrator, after rectification/ replacement the warranty clause will remain compliable as per tender conditions. No claim in this regard will be entertained.

## 19. PENALTY DUE FROM THE ELIGIBLE SI -

All costs of damages and delays for which the eligible SI is liable to the CREDA will be deducted from any money due to the eligible SI including the security deposit and other pending payments of any project under CREDA.

## 20. RESPONSIBILITY OF ELIGIBLE SI -

Notwithstanding anything mentioned in the specifications of subsequent approval or acceptance of the Solar Community Irrigation Project & Indira Gaon Ganga Yojana and its all allied works by CREDA, if any, the ultimate responsibility for satisfactory performance of the entrusted work shall rest with the eligible SI. If in any case the eligible SI does not complete the work as per the work

orders issued to them then CREDA may take over the task & complete the project at the risk and cost of eligible SI.

## 21. RESPONSIBILITY TO RECTIFY THE LOSS AND DAMAGE -

If any loss or damage occurs to the work or any part thereof or materials/system/equipment's for incorporation therein the period for which the eligible SI is responsible for the cause thereof or from any cause whatsoever, the eligible SI shall at his own cost rectify/replace such loss or damage, so that the permanent work confirms in every respect with the provision of the contract to the satisfaction of the Engineer. The eligible SI shall also be liable for any loss or damage to the work/equipment's occasioned by him in course of any operation carried out to him during performing the contract.

## 22. RESPONSIBILITY TOWARDS THE WORKMAN OR OUT SIDERS -

a. **The eligible SI shall have to take insurance coverage from any authorized Insurance Company against Workmen compensation due under Workmen Compensation Act and submit copy of the insurance document before issuance of Work order.**
b. The eligible SI shall ensure all safety measures during execution and repairs of the work. CREDA, will, in no case be responsible for any accident fatal or non-fatal, caused to any workman or outsider in course of transport or execution or repairs of work.
c. All the expenditure including treatment or compensation will be entirely borne by the eligible SIs. The eligible SI shall also be responsible for any claims of the workers including PF, Accidental Insurance, Gratuity, ESI & other legal obligations.
d. CREDA shall have all rights to deduct such claims of payments from bidder in case of complaints of such violations.

## 23. NON-ASSIGNMENTS -

a. The eligible bidder shall not assign or transfer the work orders issued as per this contract or any part thereof without the prior approval of CREDA. This can be allowed only as per policy of CREDA.
b. If eligible bidder transfer/assigned/sublet (as per the sublet policy of CREDA) in full or any part of work allocated to him without prior permission from CREDA in writing to any third party shall be liable to debar/black listed from any Bid/Activity of CREDA till further orders.
c. Bidders are advised to refer the sublet policy of CREDA from CREDA website.

## 24. CERTIFICATES NOT TO AFFECT RIGHTS OF CREDA -

The issuance of any certificate by CREDA or any extension of time granted by CREDA shall not prejudice the rights of CREDA in terms of the contract nor shall they relieve the eligible SI of his obligations for due performance of the contract.

## 25. SETTLEMENT OF DISPUTES THROUGH ARBITRATION -

a. Except as otherwise specifically provided in the contract, all disputes concerning questions of fact arising under the contract shall be decided by the Chief Executive Officer (CEO), CREDA provided a written appeal by the eligible SI is made to CREDA. The decision of the CEO, CREDA shall be final and binding to the all concerns.
b. Any dispute or difference including those considered as such by only of the parties arising out of or in connection with the contract shall be to the extent possible be settled amicably between the parties. If amicable settlement cannot be reached then all disputed issues shall be settled by arbitration.

## 26. LAWS GOVERNING CONTRACT -

The contract shall be constituted according to and subject to the Laws of India and jurisdiction of the High Court of Bilaspur, Chhattisgarh.

## 27. LANGUAGE AND MEASURES -

All documents pertaining to the Contract including specifications, schedules, notice correspondences, operating and maintenance instructions, drawings or any other writings shall be written in English / Hindi language. The metric system of measurement shall be used in this contract.

## 28. CORRESPONDENCE -

a. Any notice to the eligible SI under the terms of the contract shall be served by registered mail to the registered office of the eligible SI or by hand to the authorized local representative of the eligible SI and copy by post to the eligible SI's principal place of business.
b. Any notice to CREDA shall be served to the Chief Engineer, CREDA Raipur in the same manner.

## 29. SECRECY -

The eligible SI shall treat the details of the specifications and other documents as private and confidential and they shall not be reproduced without written authorization from CREDA.

## 30. AGREEMENT -

The successful eligible SI shall have to enter into an agreement with the CREDA in the approved contract agreement form within **10 days** of the receipt of call from CREDA.

## 31. DECLARATION OF CONFLICT OF INTEREST –

a. Any regular employee working or worked on basis of contract or through placement agency cannot work directly or indirectly in any scheme of CREDA. If such a person is found working with any SI or through sublet then, such SI shall be blacklisted for three years.
b. The bidder shall not be permitted to Bid for the work if the section of HO CREDA (responsible for implementation of work) in which his near relative is posted. Furthermore, the successful bidder shall not be given work in the district in which his near relative is posted. The bidder shall also intimate the names of his near relatives working in CREDA. Bidder shall also intimate the name of persons who are working with him in any capacity and who are near relatives to any employee in CREDA. Any breach of this condition by SI would render himself liable to be blacklisted for three years and removed from approved list of SIs in CREDA.
**Note:-** By the term near relatives are meant Wife, Husband, Parents and son, Brother, Sister, Brother-in-law, Father-in-law, and Mother-in-law etc.
c. Bidder must produce an affidavit **(Annexure – III)** stating the names of retired/removed employee of CREDA (if any) in his employment who retired /removed within last two years, if in case there is no such person in his employment, his affidavit should clearly state this fact. This affidavit is mandatory, if it is not produced along with the bid, the bid shall be rejected.

## 32. BID EVALUATION CRITERIA -

a. Offers of only those parties, who are found qualified based on Eligibility Criteria and Technical Bid, will be taken into further consideration and financial bid of only those parties who are qualifying the criteria of Technical Bid will be opened.
b. Other things being equal, the lowest rates shall normally be preferred, but CREDA shall have rights and liberty to amend/lower the rates.
c. **Conditional Bids shall not be accepted.**
d. CREDA shall have rights and liberty to call any /other parties to work on approved rates as and when required in accordance with quantum of work and scheduled time limits for completion of targets.

## 33. EVALUTION OF PRICE BID -

Price bid shall be evaluated on the basis of quoted rates. L1 rate i.e. lowest rate of total of Supply and Installation & Commissioning cost of the Solar Community irrigation Project & Indira Gaon Ganga Yojana shall be considered. However, CREDA shall have discretionary power to amend/lower the rates.

## 34. ALLOCATION OF TARGETS AND AREA OF WORK –

a. Preference shall be given to L1 Bidder in any or all categories for allocation of works.
b. Additionally, the allocation of works to bidders, including L1 bidder shall be subject to their past performance in the schemes of CREDA. CREDA reserves the right to amend the allocations to bidders based on this criterion.
c. Increase or decrease allocations shall be decided at the sole discretion of CREDA, which shall be final, binding and conclusive on the bidders.
d. Allocation can be further extended or curtailed as per discretion of CREDA, in interest of expeditious work completion.

e. CREDA reserves all rights for allocation of works and the decision of CEO, CREDA shall be final and binding.
f. Review of the progress of installation of SPVPP System allocated to SIs shall be done time to time by CREDA and if the progress of installation is found unsatisfactory, the allocation of entire remaining uninstalled System or their part of can be re-allocated to other SI as per discretion of CREDA.

## 35. BID REJECTION -

**If financial bid of a bidder has been opened on the basis of technical bid of a bidder which has been determined to be substantially responsive to the bidding document and in latter stage it is found that bidder does not meet the eligibility criteria or the technical bid is found substantially non-responsive, CREDA reserves rights to reject such bid of a bidder any time.**

**We (on behalf of Eligible SI/Bidder) have read all the above stated details & accept to comply with it in total.**

**(Name, Signature & Seal of the Bidder)**

# SECTION - 3
# SCOPE OF WORK

## 1. SOLAR PUMPS

The scope in brief will be as follows-

a. Survey of Sites, designing, supply, installation & commissioning of SPV Pumps as per design and specifications approved by CREDA, on turnkey basis. Bidder shall have to take approval of the engineering documents, Bill of Materials and samples from CREDA prior to commencement of the work. Five years unconditional onsite warrantee for manufacturing defects shall be required for each of the system after successful commissioning and proper handing over.

b. Solar Pumps should be installed with Fixed Module Mounting Structures.

c. The scope of work shall also includes the followings:

i. Survey of Sites, Submission of site clearance certificate where the SPV Pumps are to be installed. A layout plan of the site should also be submitted clearly indicating the identified location for installation of SPV Modules, Structures and other components shall be installed. Work order shall be issued only after receipt of satisfactory reports suitable for system installation. SI/Contractor shall furnish all necessary information to beneficiary for SPV Pump Warrantee, Do & Don'ts etc. so as to avoid further misunderstandings and disputes.

ii. Detailed planning of time bound smooth execution of project.

iii. Providing User Manuals and Warrantee Cards to beneficiary / farmers group / CREDA.

iv. SI shall have to submit JCCs within 120 days of Installation and Commissioning of SPV Pumps in District Office of CREDA.

v. Unconditional onsite warrantee for manufacturing defects for five years' faultless operation, assure inventory for maintenance.

vi. Providing Prompt Service Facilities to customers/ beneficiaries.

vii. Risk liability of all personnel associated with implementation and realization of the project.

viii. Training of at least two persons nominated by user, on the various aspects of design and maintenance of the offered system after commissioning of the system.

ix. The eligible SI/Contractor shall maintain sufficient inventory of the spares to ensure that the system can be made functional within 5 days from the communication of breakdown of the system during currency of the warrantee period.

x. The eligible SI/Contractor shall run the system on trial basis and shall closely monitor the performance of the system before handing over the system, so that the assured water discharge can be estimated for monitoring of the performance of the system. CREDA shall examine the water discharge and ascertain if the discharge is adequate with reference to the capacity of the SPV Pump.

xi. Performance Guarantee Test: Successful performance guarantee test to demonstrate the rated capacity of SPV Pump as per CREDA's norms shall have to be conducted by SI/Contractor in presence of representatives of CREDA, if required.

xii. Joint Less PVC or Column Pipes should be used as suction pipe in the installation of surface pumps.

## 2. WATER DISTRIBUTION NETWORK (WDN)

a. **Bidder should provide the specific drawing & design at site for Contour Survey & Pipe line design & Drawing for Water Distribution Network. Details as follows-**

**i Topographical & Contour Surevey (Contour at 1.0 Mtr. Interval).**

**ii Existing Features.**

**iii Grid Level at 30 Meter interval.**

**iv Plan Superimposing on Google Image.**

**v Site location with GPS coordinates on plan.**

vi **Design of Water Distribution Network with demand of water per site (LPM/LPH)**

b. All the work shall be executed as per the specifications laid down in standard specifications published by Public Works Department and as per the relevant provision of I.S. Code as applicable. In addition to above, item wise specifications given elsewhere with this tender document shall be applicable.

c. Contractor can use HDPE pipe in lieu of UPVC pipe at the approved unit rate or his quoted rate whichever is less and no additional payment or claim shall be eligible to the Contractor for the use of HDPE pipe in lieu of UPVC pipe.

d. Contractor can use Tee/Reducer/Bend of HDPE in lieu of UPVC at the approved unit rate or his quoted rate whichever is less and no additional payment or claim shall be eligible to the Contractor for the use of HDPE Tee/Reducer/Bend in lieu of UPVC Tee/Reducer/Bend.
e. Composite type of material is not allowed in one mains/submains.
f. If Contractor opts for HDPE pipe in lieu of UPVC pipe then redesigning of mains/sub mains will be required. Redesigning shall be carried out before preparing estimate for mains/ sub mains.
    i. The relevant specifications for different types of pipe material shall be followed in handling and laying of pipes. Manufacturing and factory testing and supplying at site of work of different diameters of different types pipes for different tests confirming to relevant IS or it's latest revision.
    ii. The pipes manufactured at factory are to be carried to the site of work either directly or stacked suitably along the road or elsewhere near the site. Extreme care shall be taken while handling the pipes, damage during the transit and handling shall be at CONTRACTOR's account and shall not be payable. Damage pipes shall be rejected outright. The discretion of the Engineer-in-charge in this behalf shall be final and binding on the CONTRACTOR. The payment of the entry tax, octroi tax and all other taxes shall be the responsibility of the CONTRACTOR
    iii. Spigot & socket dimensions shall confirm I.S. 458-2003 amendments No.2 April-1991 or its latest revision.
    iv. All pipes shall be thoroughly inspected before laying, damaged pipe, if any shall not be used & shall be removed from the site immediately.
    v. For lowering, laying and jointing of the pipe, the provision of relevant I.S. shall be strictly followed. Laying shall not be started till the bedding is approved by Engineer-in-charge or his subordinate.
    vi. The pipes shall be laid on earth which shall be bedded evenly and firmly as far as up to the haunches of the pipe as to safely transmit the load expected from the back fill through the pipe to the bed. This shall be done either by excavating the bottom of the trenches to fit the curve of the pipe or by compacting the earth under round curve of the pipe to form an even bed. Necessary provision shall be made for joints wherever required.
    vii. Pipe shall be lowered in trenches very carefully and if required it shall be lowered with mechanical appliances such as crane, chain pulley block with tripped arrangements, etc. only.
    viii. The pipes shall be laid true to line and alignment with specified grades. Laying of pipes shall preferably proceed upgrade of slopes.
    ix. The trenches shall be kept free of water till the jointing material is properly set.
    x. Whenever there are chances of rain water entering into trenches, care shall be taken to prevent pipe line from floating during the construction.
    xi. Jacking for pipe line should be done properly as per the instruction of the Engineer-in-charge.
    xii. Before jacks are removed the side should be filled with well rammed earth to prevent all chances of subsequent movement where more pipes are jacked later on.
    xiii. If the laid pipe goes in zigzag in position due to excess of jacking the pipes have to be removed and re-laid by the CONTRACTOR with no extra cost.
    xiv. The CONTRACTOR shall remove all the silt and debris if found in the pipe line.
    xv. The CONTRACTOR shall have to make good any leakage at his cost and satisfactory test shall have to be given after the same. The pipe line once laid and jointed but damaged subsequently during the monsoon or due to any other reasons shall have to be rectified by the CONTRACTOR at his cost. The testing of the laid pipe
    xvi. Line should be in accordance with relevant I.S. or its Latest version and amendments thereto.
g. After pipe-laying is completed and inspected thoroughly and tested, the pipe trenches shall be filled with excavated stuff only. The work of back filling of trenches to its natural ground is covered under the item of excavation. No separate payment will be made for back filling. The

back filling of excavated stuff shall include back filling trenches in layers not exceeding 15 cm with watering and compacting the fill with suitable compacting devices as directed by the Engineer-in-charge.

i. Due care shall be taken to protect existing structures, sewer line, telephone / electricity cables, electric line, gas pipe line, irrigation pipe line etc. In the event of damage to these utility service structures/ cables/pipe lines during the coarse of execution shall have to be repaired / remedied by the CONTRACTOR at his own cost & risk.

ii. At any public highways, road crossings or at such other crossings, the water carrying pipes shall be laid in the RCC NP3 class casing pipes. The casing pipe shall be of appropriate diameter suggested by the Engineer–In-charge which may be about 100 mm or more larger than the carrier pipe.

h. The Contractor shall be responsible for supply & laying work of pipe/Pipe lines with all required specials and other materials such as :

i. Shut off Valves – Up to 2 inch ball valves, above 2 inch butterfly valves of reputed make-
ii. Non Return Valves of reputed make-
iii. Strainers – "Y type" or "Pot type" of reputed make-
iv. Automatic air & vacuum vent valves of reputed make-
v. Glycerine Filled Pressure Gauges of reputed make-
vi. Pressure Relief Valve of reputed make-
vii. Globe Valve of reputed make-

i. Each Pump assembly shall have Shut off valve, strainer and pressure gauge before suction and NRV and shut off valve & pressure gauge at discharge.

j. Automatic air and vacuum vent valve shall be install at regular interval based on the site condition.

k. The Contractor/Tenderder shall be responsible to meet all necessities which are required for proper distribution of pipe lines.

l. **Payments & required materials for trenching work:**

i. The trench depth shall be at least 03 feet (900mm) and the width shall be at least three times the pipe dia.

ii. As per the soil texture the back filling of the trench shall be with adequate quantity (minimum 100mm thick) of sand.

m. Proper combination of all parts of pipe lines with back-flow prevention.

n. Pipe materials shall be made as per UPVC (For underground Pipe Line Work) /HDPE (For Over ground Pipe Works) standard & it shall be Rat proof also. Fitting works shall be done as per BIS/ISI norms & specifications.

o. **Leak Testing**

If a leak test is required, it should be conducted in accordance with the procedure after the embedment material is placed.

p. **Trench Backfill**

The final backfill may consist of the excavated material, provided it is free from unsuitable matter such as large lumps of clay, organic material, boulders or stones larger than 8 inches, or construction debris. Where the pipe is located beneath a road, place the final backfill in lifts as mentioned earlier and compact to 95 percent Standard Proctor Density

## 3. CIVIL WORKS

a. **Bidder should provide the specific drawing & design at site for all allied works as platform/ intake well/buffer well for solar pumps, control room etc. Details as follows-**

**i Providing Position, Location of site.**

**ii Providing Competency of Structure, Strata Type, Structure Drawing, Necessary Design, Level report includes, River, GL Difference.**

**iii Certification for compatibility of the suggested structures.**

b. Before starting work the SI/ Contractor shall be required to submit the detail drawing of structures, after approval from CREDA the SI/contractor could be able to start the work at site.

c. Layout of the work will be done by the contractor in consultation with the Executive Engineer of the department or his representative, some permanent marks should however be established to indicate the demarcation of the structure or any component thereof made to this permanent marks in measurement books and drawing signed by the contractor and the departmental officer, responsibility regarding layout will be joint.

d. Eligible contractor shall have to execute all works on site as CREDA's approved drawing, design & specifications.

e. The material required only for this work shall be kept in the godown at site. No material shall be shifted outside of the godown site except for the work for which this agreement is entered, without prior approval of the Engineer-in-charge.

f. The materials i.e. cement, T.M.T. steel bars, concrete, sand, etc. brought on the work site shall be accompanied with necessary Company / Manufacturing firm's test certificates. In addition these materials shall be tested as per frequency prescribed by the department and the cost of such testing shall be borne by the contractor. If the test results are satisfactory, then and then only the material shall be allowed to be used on the work. If the test results are not as per standards prescribed, these materials shall be immediately removed from the work site at contractor's cost. In case of cement, if so requested by the contractor in writing, material shall be allowed to be used before receipt of test results but this will be entirely at the risk and cost of the contractor.

g. The contractor shall produce sufficient documentary evidence i.e. bill for the purchase, Octroi receipts etc., bill for the purchase of materials brought on the work site at once if so requested by the Department.

h. All the materials such as cement, T.M.T. steel bars, concrete, sand, etc. required for execution of work shall be brought by the contractor at his own cost.

i. The contractor shall maintain the record with photographs of all consumed works as well as materials like excavation works done for various works, use of cement, concrete, aggregate, sand, muroom, steel etc. The Contractor shall submit periodically as well as on completion of work, an account of all materials used by him on the work. In addition, a separate register shall be maintained on site for recording daily item wise cement, T.M.T. steel bars, concrete, sand, etc. consumption and also item wise consumption of other materials. This shall be signed daily by contractor or his representative and representative of Engineer-in-charge.

j. All photographs which are being maintained for keeping records of various works should be clearly visible and justified with measurement equipment as measuring tape, spirit level, plumb etc.

k. Proper curing of all allied civil works shall be done by the contractor, in case of properly non-cured civil works contractor shall be directly responsible for the same, and thus re-construction of that particular non-cured part/work shall be required which should be done by the contractor at his own cost.

l. Slump Test shall be required for each construction work at site in presence of competent authority.

m. Contractor will have to submit 28 Days cube test as an attachment in the joint Commissioning Certificate (JCC). Payment component pertaining to civil works shall be retained by CREDA until the contractor submits cube test report.

# SECTION - 4
# SPECIFICATION FOR SOLAR PHOTOVOLTAIC WATER PUMPING SYSTEMS, WATER DISTRIBUTION NETWORK AND CIVIL WORK

## 1. SPECIFICATION FOR SPV PUMPING SYSTEM

General Specifications of SPV Pumping Systems shall be in accordance with prevailing guidelines of MNRE; however the specifications of some components are also mentioned as follows –

### A. SPV MODULES

i. SPV array contains specified number of same capacity, type and specificationmodules connected in series or parallel to obtain the required voltage or current output. Only IEC/BIS Tested module shall only be used in the system. The wattage of each module should be at least 300 Wp of 72 cell and open circuit voltage of the PV modules under STC should be at least 42 Volts.

ii. Modules supplied with the SPV Power Plant systems shall have certificate as per IS14286/IEC 61215 specifications or equivalent National or International/ Standards. STC performance data supplied with the modules shall not be more than one yearold.

iii. Modules must qualify to IS/IEC 61730 Part I and II for safety qualification testing.

**iv. The minimum module efficiency should be minimum 15 percent and fill factor shall be more than 70percent.**

**v. Modules must qualify to IEC TS 62804-1:2015 for the detection of potential-induced e-gradation - Part 1: Crystalline silicon (Mandatory in case the SPV array voltage is more than 600 VDC).**

**vi. The name plate shall conform the IS 14286/IEC61215.**

**vii. Module to Module wattage mismatch in the SPV array mismatch shall be within (±) 3 percent**

**viii. Variation in overall SPV array wattage from the specified wattages shall be within zero percent to +10percent.**

**ix. The PV Modules must be warranted for output wattage, which should not be less than 90% of the rated wattage at the end of 10 years and 80% of the rated wattage at the end of25 years.**

x. **IDENTIFICATION** AND TRACEABILITY

Each PV module must use a RF identification tag (RFID), which must contain the following information:

1. Name of the manufacturer of PV Module
2. Name of the Manufacturer of Solar cells
3. Month and year of the manufacture (separately for solar cell and module)
4. Country of origin (separately for solar cells and module)
5. I-V curve for the module (should be submitted in soft copy at D.O.)
6. Peak Wattage, $I_m$, $V_m$ and FF for the module
7. Unique Serial No and Model No of the module
8. Name of the test lab issuing IEC certificate
9. Other relevant information on traceability of solar cells and module as per ISO 9000 series.

**The RFID must be inside of module lamination. The module laminate, but must be able to withstand harsh environmental conditions**

xi. The panel should be supplied with CREDA Logo in the form of sticker on the back of SPV panel or duly laminated inside the glass of solar module with the remark "Manufactured for CREDA". Inter connections of solar modules should be through good quality male female joint. Name of manufacturer, Sl. No. of Module & manufacturing year should be clearly fixed inside the glass lamination of every module. Back label should be affixed behind every module which should clearly state the specifications & capacity of the module.

xii. All SPV modules must be indigenously built and made in India

**Test reports/ certificate from IEC/NABL accredited laboratory to be mandatorily enclosed for relevant IEC/equivalent BIS Standards. All Solar modules shall be strictly as per MNRE's ALMM list w.e.f. 31.03.2021.**

**B. MECHANICAL COMPONENTS-**
**MODULE MOUNTING STRUCTURE (MMS)-**

i. The module & frame structure shall be mild steel, hot dipped galvanized (80 micron) with corrosion resistant painting for holding the PV modules.

ii. Each panel frame structure shall be so fabricated as to be grouted on ground on its legs.

iii. The size of angle iron/C channel should not be less than 40X40X5 mm. Anti-Theft Nut Bolts of SS (with washers) should be used for mounting modules for better theft proofing. Regarding civil structures. The bidder need to take care of the load baring capacity of the roof and need to arrange suitable structures based on the quality of roof. (as per drawing attached in Annexure - V)

iv. The total load of the structure (when installed with PV modules) on the terrace should be less than 60kg/m2.

v. The minimum front clearance of the structure from the roof level should be 300mm.

vi. The legs of the structures made with hot dip GI angles will be fixed and grouted in the RCC foundation columns made with 1:2:4 cement concrete. The foundation should be as per design of structure to withstand maximum windloading.

vii. There shall be a minimum air gap of 3 +/- 0.3cm between the facing edges of two adjacent modules on all sides.

viii. Each panel frame structure shall have inclination between 20 - 40 degrees depending on the site location seasonal load requirement. A weather proof junction box as per the relevant ISI specifications, to be provided where the module terminals shall be interconnected and output taken.

ix. All nuts bolts, and fasteners should be made of stainless steel.

x. The structure should be designed to allow easy replacement of any module and shall be aligned with siterequirement.

xi. The structure should be designed for simple mechanical and electrical installations.

xii. It will be designed to withstand severe cyclone/ storm with the speed max. 150 Km/hr (STAAD.Pro report may be required to besubmitted.

xiii. The systems should be installed at ground level / roof top at least the height of 450mm with a CC block of 300X300X300 mm with each support.

**C. SPV CONTROLLER-**

Controller must be indigenously built and made in India. Maximum Power Point Tracker (MPPT) shall be included to optimally use the power available from the SPV array and maximize the water discharge.

The SPV Controller must have IP (65) protection or shall be housed in a cabinet having at least IP (65) protection.

Adequate protections shall be provided in the SPV Controller to protect the solar powered pump set against the following:

i Dry running;

ii Open circuit;

iii Accidental output short circuit;
iv Under voltage;
v Reverse polarity;
vi SPD to arrest high current surge; and
vii Lightening arrestor.

A good reliable DC Circuit Breaker as per IS/IEC 60947-2 suitable for switching DC power ON and OFF shall be provided in the SPV Controller.

All cables used shall be as per IS694. Suitable size of cable shall be used in sufficient length for inter-connection between the SPV array to SPV Controller and the SPV Controller to solar powered pump set. Selection of the cable shall be as per IS14536.

**D. EARTHING ARRANGMENT**

i. Earthing of the motor shall be done as per IS 9283 in accordance with the relevant provisions of IS 3043. Separate earthing shall be provided for Controller, pump and SPV array.
ii. For safety purpose, it shall be ensured during installation that the earthing is capable of taking care of leakage current.
iii. In case of UPVC/HDPE pipes used as discharge pipe, a separate non-corrosive, low resistance
iv. Conductor from motor earth terminal to control panel earth terminal shall be provided for earthing.
v. A lightening arrestor shall be provided with every SPV Water Pumping System.

**E. SURGE PROTECTION MECHANISM-**

Internal surge protection shall consist of three MOV type arrestors connected from +ve and –ve terminals to earth (via Y arrangement) for higher withstand of the continuous PV-DC voltage during earth fault condition. SPD shall have safe disconnection and short circuit interruption arrangements through integrated DC in built bypass fuse (parallel) which should get tripped during failure mode of MOV, extinguishing DC arc safely in order to protect the installation against fire hazards. Nominal discharge current ($I_n$) at 8/20 micro seconds shall be minimum 10 KA with maximum discharge ( $I_{max}$) at 8/20 micro seconds minimum 20 KA with visual indication ( through mechanical flag) in modules to monitor the life of SPD.

**F. USE OF INDIGENOUS COMPONENTS-**

It will be mandatory to use indigenously manufactured solar modules. The motor-pump-set, controller and balance of system should also be manufactured indigenously. The SI has to declare the list of imported components used in the solar water pumping system.

**G. TESTS FOR HYDRAULIC AND ELECTRICAL PERFORMANCE OF PUMPSET -**

The motor-pump set shall be tested independently for hydraulic and electrical performance as per the relevant IS specification including following test -

i. Constructional requirements /features
ii. General requirements
iii. Design features
iv. Insulation resistance test
v. High voltage test
vi. Leakage current test

Testing of SPV Water Pumping Systems shall be done as per procedure specified by the MNRE.

**H. GUARANTEE OF PERFORMANCE -**

The SPV Water Pumping Systems shall be guaranteed for their performance of the nominal volume rate of flow and the nominal head at the guaranteed duty point, condition of 7.15 KWh/$m^2$ on the surface of SPV array (i.e. coplanar with the Photo Voltaic (PV) Modules). The actual duration of pumping of water on a particular day and the quantity of water pumped could

vary depending on the solar intensity, location, season, etc.

Solar Photo Voltaic Water Pumping Systems shall be guaranteed by the manufacturer against the defects in material and workmanship under normal use and service for a period of at least 60 months from the date of commissioning.

Sufficient spares for trouble free operation during the Warrantee period should be made available as and when required.

**I. MARKING AND PARAMETERS TO BE DECLARED BY THE MANUFACTURER -**

The motor pump-set and Controller used in SPV Water Pumping Systems shall be securely marked with the following parameters declared by the manufacturer:

**Motor Pump-set -**

i. Manufacturer's name, logo or trade-mark;
ii. Model, size and SI No of pump-set;
iii. Motor Rating (kW /HP);
iv. Total head, m, at the guaranteed duty point;
v. Capacity (LPD) at guaranteed head;
vi. Operating head range, m;
vii. Maximum Current(A);
viii. Voltage Range (V)and;
ix. Type - AC or DC Pump set;&
x. Photo Voltaic (PV) Array Rating in Watts peak(Wp)

**Controller -**

i Manufacturer's name, logo or trade-mark;
ii Model Number;
iii Serial Number;
iv Voltage Range;
v Power Range in kW for Controller ;and
vi Current rating(A)

**J. OPERATION AND MAINTENANCE MANUAL -**

An Operation and Maintenance Manual in Hindi, should be provided with the solar PV pumping system. The Manual should have information about solar energy, photovoltaic, modules, DC/AC motor pump set, tracking system, mounting structures, electronics and switches. It should also have clear instructions about mounting of PV module, DO's and DONT's and on regular maintenance and Trouble Shooting of the pumping system. Helpline number and Name and address of the Service Centre and contact number of authorized representative to be contacted in case of failure or complaint should also be provided. A warranty card for the modules and the motor pump set should also be provided to the beneficiary.

**K.** Raw material test certificates (MTC) of all types of raw material used in dual axis manual tracking type MMS as per appropriate IS code should be submitted along with dispatch documents.

**L. TESTS TO BE PERFORMED ON MMS FOR SOLAR WATER PUMPING SYSTEM -**

For ascertaining proper welding of structure part following should be referred -

i. Weld wire grade should be of grade **(ER 70 S -6)**
ii. D.P. Test (Pin Hole / Crack) **(IS822)**

For ascertaining hot dip galvanizing of fabricated structure following should be referred -

i. Min coating required should be as per IS4759.
ii. Testing of galvanized material.
    (i) Preece Test ($CuSO_4$ Dip Test) **(IS2633)**
    (ii) Mass of Zinc **(IS 6745)**

(iii) Adhesion Test **(IS2629)**

## 2. SPECIFICATION FOR WATER DISTRIBUTION NETWORK-

Pipe diameters mentioned in the item are outer diameter of UPVC Pipe. The designs of Main & Sub-Mains are carried out considering UPVC pipes of Class-3(6 kg/cm$^2$) having following outer and inner diameters as per IS-4985:2000. Providing and supplying in standard length ISI mark rigid un-plasticized PVC pipes suitable for potable water with ringfit, joint including cost of rings as including all local and central taxes. Transportation, freight charges, octroi, inspection charges, loading, unloading, conveyance to the site of work and including cost of jointing materials etc complete.)

**a. Specifications for UPVC Pipes of 06 Kg/cm$^2$ as : IS-4985:2000**

| Sl. No. | Nominal Outside dia (In mm) | Average Max. Thickness (In mm ) | Min. Thickness (In mm ) | Max. Thickness (In mm) |
|---|---|---|---|---|
| 1 | 75 | 3.1 | 2.6 | 3.1 |
| 2 | 90 | 3.7 | 3.1 | 3.7 |
| 3 | 110 | 4.3 | 3.7 | 4.3 |
| 4 | 125 | 5 | 4.3 | 5 |
| 5 | 140 | 5.5 | 4.8 | 5.5 |
| 6 | 160 | 6.3 | 5.4 | 6.2 |
| 7 | 180 | 7 | 6.1 | 7.1 |
| 8 | 200 | 7.7 | 6.8 | 7.9 |
| 9 | 225 | 8.6 | 7.6 | 8.8 |
| 10 | 250 | 9.6 | 8.5 | 9.8 |
| 11 | 280 | 10.7 | 9.5 | 11.0 |
| 12 | 315 | 12.0 | 10.7 | 12.4 |
| 13 | 355 | 13.4 | 12.0 | 13.8 |

**b. Lowering, laying, Jointing and testing un-plasticized PVC pipes & specials of following class and diameter includinglabour, hydraulic testing etc. complete but excluding cost of cement solvent:**

| (Test Pressure 06 kg/cm2) | | | |
|---|---|---|---|
| i | 75 mm dia. (UPVC) | viii | 200 mm dia. (UPVC) |
| ii | 90 mm dia. (UPVC) | ix | 225 mm dia. (UPVC) |
| iii | 110 mm dia. (UPVC) | x | 250 mm dia. (UPVC) |
| iv | 125 mm dia. (UPVC) | xi | 280 mm dia. (UPVC) |
| v | 140 mm dia. (UPVC) | xii | 315 mm dia. (UPVC) |
| vi | 160 mm dia. (UPVC) | xiii | 355 mm dia. (UPVC) |
| vii | 180 mm dia. (UPVC) | | - |

**c. Providing and supplying at site of work including freight, loading, unloading, stacking, insurance and all taxes etc complete.**

**Made from I.S.I. approved UPVC material (Test Pressure 6 kg/cm2)**

**Tee (Preferably Moulded)**

| | | | |
|---|---|---|---|
| i | Size (75X75 mm) | viii | Size (200X200 mm) |
| ii | Size (90X90 mm) | ix | Size (225X225 mm) |
| iii | Size (110X110 mm) | x | Size (250X250 mm) |
| iv | Size (125X125 mm) | xi | Size (280X280 mm) |
| v | Size (140X140 mm) | xii | Size (315X315mm) |
| vi | Size (160X160 mm) | xiii | Size (355X355mm) |
| vii | Size (180X180 mm) | | |

**Elbow (Preferably Moulded)**

| | |
|---|---|
| (i) size (75 x 75 mm) | (viii) size (200 x 200 mm) |
| (ii) size (90 x 90 mm) | (ix) size (225 x 225 mm) |
| (iii) size (110 x 110 mm) | (x) size (250 x 250 mm) |
| (iv) size (125 x 125 mm) | (xi) size (280 x 280 mm) |
| (v) size (140 x 140 mm) | (xii) size (315 x 315 mm) |
| (VI) size (160 x 160 mm) | (xiii) size (355 x 355 mm) |
| (vii) size (180 x 180 mm) | |

Reducer (Moulded/ Fabricated), Tee, UPVC Band & Other Items shall be installed in accordance to the requirement.

**d.** Excavation of trenches, Back-filling the excavated stuff and watering & compacting the back-filled stuff where casing pipes are to be laid by open cut method.

**The excavation of trenches for laying pipes will include following activities–**

i. Setting out works, profiles etc, according to sanctioned plan for as ordered and setting up Bench marks as other reference mark.

ii. Providing and subsequently removing, shoring and strutting or cutting slopes except when, separately provided for in the tender.

iii. Bailing and pumping out water when separate provision does not exist for it in the tender.

iv. Excavation and removal of all materials of whatever nature wet or dry and necessary for the construction of foundation including materials like explosives, removal of blows and slips and use of tools, plant and equipment necessary for satisfactory completion of the item and preparing bed for foundation.

v. Sorting out of useful excavated materials, conveying them up to the specified lead clear beyond the structure and stacking them neatly for backfilling or reuse and wasting useless materials as directed by the Engineer.

vi. Backfilling the trenches alongside masonry or concrete with approved material ground risk or accident.

vii. Necessary protection including labour, materials and equipment to ensure safety and protection against risk or accident.

viii. Supply of facilities for inspection and measurement at any time by the concerned Government office.

Compensation for injury to life, and damage to property if any caused by the CONTRACTOR's operations connected with this item.

**e. CLEARING SITE-**

The site on which the pipe is to be laid shown on the plan and area required for setting out and other operation should be cleared and all obstructions, loose stones, materials and

rubbish of all kind, stumps, brush wood and trees removed as directed, roots being entirely grubbed up. The material obtained will be property of Government and materials pronounced useful by the Engineer will be conveyed and property stacked as directed within the specified lead. Useless materials will be burnt or otherwise disposed of as directed by the Engineer.

**f. SETTING OUT-**

After clearing the site, the center lines will be given by the Engineer and it will be responsibility of the CONTRACTOR to install substantial reference marks, bench marks, etc. and maintain them as long as required true to line, curve, level and slops. The CONTRACTOR will assume full responsibility for alignment, elevation and dimension of each and all parts of the work, labour, materials, etc. required for setting out and establishing bench marks and other reference marks shall be arranged by the CONTRACTOR at his own cost.

**g. EXCAVATION-**

Excavation for pipe line trenches shall include removal of all materials of whatever nature and whether wet or dry, necessary for laying pipes to the required level & shall be exactly in accordance with the lines, levels, grades, and curves shown on the plans or as directed by the Engineer. It shall be taken to the exact width as per diameter of pipes to be laid and the sides shall be plumb where the nature of soil admits it. CONTRACTOR shall at his own cost do the necessary shoring or cutting of slopes to safe angle or both as approved by the Engineer when the strata need such treatment. The CONTRACTOR shall notify the Engineer – In - Charge after achieving the foundation level to allow permission for laying of pipes.

**h. SHORING-**

Unless separately provided for the contract, excavation of slopes to prevent falling in sides or providing, fixing maintaining and removing, shoring, bracing, etc. shall not be paid for. The CONTRACTOR would be responsible for the design of shoring for the excavation to be properly upheld. Shoring shall be of sufficient strength to resist side pressure and ensure safety from slopes, blows and to prevent damage to work and property and injury to persons. It shall be removed as directed after all the items for which it is required are completed.

**i. PROTECTION-**

Near towns and all frequented places foundation pits, well pits and similar excavation shall be strongly fenced and marked with lights at night in charge or watchman to avoid accidents, Adequate protective measures shall be taken to see that the foundation excavation does not affect or damage adjoining structures. All measures required for the safety of the excavation the people working in and near the foundation trenches, property and the people in the vicinity shall be taken by the CONTRACTOR at his own cost. He being entirely responsible for any injury to life and damage to property caused by his negligence or accident due to his constructional operations.

**j. DISPOSAL OF EXCAVATED MATERIALS-**

No materials excavated from foundation trenches of whatever kind they may be are to be placed even temporarily nearer that 1.5m or greater distance prescribed by CREDA from the outer edge of excavation. All materials excavated will remain the property of Government. Rate of excavation includes sorting out of useful materials and stacking them separately as directed. Materials suitable and useful for backfilling or other use shall be stacked in convenient places but not in such a way as to obstruct free movement of men, animals and vehicles or encroach on the area required for constructional purpose. It shall be used to the extent required to completely backfill the structure to original ground level or elevation shown on the plans or as directed by the Engineer. For backfilling the materials shall be placed in 15 cm. (6" approx) to 20 cm (8"approx.) layers, moistened and well compacted. Materials not useful in any way shall to wasted as directed by CREDA. If useful excavated rubble is required by the CONTRACTOR for use in other times, it shall be paid for at the fixed in the tender and if not so provided, at the rate in the Divisional schedule current at the time of tendering or at mutually agreed rate if there is no rate in the Divisional schedule. The site shall be left clean of all debris on completion.

**k. DEWATERING-**

The excavation rate shall include bailing or pumping our all water which may accumulate in the excavation during the progress of the work either from seepage, springs, rain or any other cause and diverting surface flow if any, by bunds or other means. The bunds shall be removed after their purpose is served.

Pumping out water from any foundation enclosure or trenches shall be generally in such a manner as to preclude possibility of any damage to the foundation trenches, concrete or masonry or any adjacent structure. The excavation shall be kept free from water (1) during inspection and measurement. (2) When concrete and/or masonry are in progress and till they come above the natural water level and (3) till the Engineer considered that the mortar is sufficient set.

**l. SLIPS AND BLOWS-**

If there are any slips or blows in the excavation they shall be removed by the CONTRACTOR without cost to the department so as to provide the correct dimensions required for the foundation.

**m. BACK FILLING OF PIPE LINE TRENCHES-**

The item also includes backfill of pipeline trenches with excavated stuff to its natural ground level after pipe laying is completed. All fill materials shall be laid in continuous level, layer not exceeding 15 cm. and shall be well compacted. No separate payment shall be made for back filling of pipe line trenches.

**n. TESTING OF PIPES-**

The pipes to be used shall be tested before procurement. The CONTRACTOR shall have to make necessary arrangement for testing of pipes of each class and each diameter at the factory of the manufacturer/Vendor. The test required to be carried shall be as per I.S. No pipes without testing shall be allowed to use in work.

**o. INSPECTION-**

In addition to the progressive supervision and inspection by the Engineer in charge or his representative, the Contractor shall offer for inspection to Engineer in Charge or his representative, the complete, erected or its Parts.

**p. MASONRY WALLS IN 1:5-**

Masonry wall in 1:5 proportions of appropriate dimensions as per the requirement of the site situation shall have to be constructed at both the ends of the casing pipes to serve as plugs to prevent entry of soil / debris in the casing pipe. The walls shall have to be plastered in 1:3 proportion in appropriate dimension as directed by the Engineer-In Charge. No extra payment shall be made for this activity.

**q. MONSOON DAMAGES-**

Damages due to rain or flood to UGPL and / or in foundation of structure shall have to be made good by the CONTRACTOR till the work is finally handed over to the CREDA.The responsibility of de-silting and making good the damages due to rain or flood rests with the CONTRACTOR, throughout the defect liability period of work and not only limited to earthwork. No extra cost is payable for such operations to protect the work done during the construction and the CONTRACTOR shall therefore have to take all necessary precautions to protect the work done during the construction period. The provision made in this Para shall be applicable to all the components of the work under this contract up to defect liability period of the entire work. The CONTRACTOR shall take all precautionary measures well prior to onset of monsoon to prevent entry of flood water in UGPL and structures on it from drains, nallas, river and other area. However any damage done to the work or silting or slush caused shall have to be attended by the CONTRACTOR without any extra cost to CREDA and no time limit sanction shall be enter for the work. During monsoon the Contractor shall make available the machinery such as pumps, excavators, dozers, rollers etc. and skilled and unskilled manpower to attend the emergency conditions of flood inundation. The cost for such operations, shall not be paid separately and deemed to be included in the rates quoted in respective Items of Schedule-B. The Contractor shall take all necessary precautions to prevent the entry of rain / flood water during monsoon in the pipe line and structures on it.

**r. UPVC (UN-PLASTICIZED POLYVINYL CHLORIDE) PIPE LINE-**

The specification covers the work of providing and laying all diameter UPVC Pipe line including testing etc.

**General Specifications and requirements:**

**i Raw material-**

Raw material used to manufacture **UPVC** Pipes shall be virgin compound(polyvinyl chloride resin) conforming to IS:4985-2000 and its testing shall conform to IS:4669-1968.The bulk density of the **UPVC** compound shall be 0.50 to 0.53. The density of UPVC pipe shall be 1.40 to 1.46 g / cm3.

**ii Temperature variation-**

All the pipes to be manufactured, supplied and erected shall be resistant to whether conditions like sun, dust, rain, wind etc as per the environmental conditions under the project area. They shall also be subject to carry and convey raw water under variable temperature conditions ranging from 4 to 45 deg. Centigrade.

**s. MARKING-**

Each pipe shall be indelibly marked in English language at an interval of 1m by heat embossing. The marking shall show the following:

i Manufactures name or trade mark.
ii Grade of raw material
iii Class of pipe & pressure rating.
iv Outside diameter
v Lot/batch No. of manufacturer.
vi ISI certification mark.
vii Name of Department / Project under which work is to be executed: "CREDA"
viii Any other important matter that the manufacturer or purchaser deems fit to be inscribed.

**t. MATERIAL AND WORKMANSHIP-**

**i** General requirements of material and workmanship shall mean any material or article either raw material or additives or finished are required to be used in the manufacturing process of pipes.

**ii** The material used for manufacturing of pipes should not constitute any toxic hazards, should not support micro biological growth and should not give rise to unpleasant test or odour, discolorations of water. The Contractor shall have to produce a certificate fulfilling these effects from the pipe manufacturer. Pipe manufacturer shall obtain certificate to this effect from the manufacturer of raw material. Also a certification from raw material manufacturer that the raw material meets the poly vinyl chloride confirming to ISO 4435-1991 &, IS:4985-2000and its latest revision amendments.

**iii** The material from which the pipes are made shall consists substantially of poly vinyl Chloride confirming to IS :10151-1982 to which may be added only those additives that are absolutely needed to facilitate the manufacture of the polymer and the production of sound durable pipe of good surface finish, mechanical strength and opacity.All other quality parameters like density, MFR, Carbon black contents and anti oxidant used for manufacturing of pipes shall be strictly as per IS :12235-2004 and it's latest revision/ amendments.

## 3. TECHNICAL SPECIFICATION OF PIPES-

### A. UPVC PIPES-

a. The General requirement relating to the manufacture of UPVC pipes shall be confirming to IS: 4985 - 2000 and its latest revision /amendments.

i The dimension, material composition, tests etc shall be as per IS:12235 – 2004 and its latest revision/ amendments.
ii UPVC pipes shall be marked with ISI certification mark.
iii The pipe dimensions and tolerances shall be as per latest revisions and amendments of IS 12235 - 2004. (Part1) & IS 4985-2000

b. **TESTS-**

The following tests as per IS: 12235-2004 and it's latest revision/amendments will be carried out by the agency .

i Dimensions (Inside and outside diameter, Wall thickness and Length of pipe) as per Clause No. 7.0 of IS:4985-2000
ii Visual appearance as per Clause No. 10.1 of IS:4985-2000
iii Hydraulic Characteristicsas per Clause No. 11.1 of IS:4985-2000
iv Reversion test as per Clause No. 10.4 of IS:4985-2000
v Density test as per Clause No. 10.6 of IS:4985-2000
vi Sulphate Ash Content 11% Max. as per Clause no. 10.7 of IS : 4985-2000
vii Internal hydrostatic pressure in accordance with IS: 12235-2004 (part–8), pipe shall not burst during the prescribed test duration.
viii The PVC pipe shall not contain vinyl chloride monomer (VCM) exceeding 1 ppm when determined by means of gas phase chromatography using the "headspace" method according to IS: 10151-1982.
ix The wall of the wall of the plain pipe shall not transmit more than 0.2% of visible light falling on them when tested in accordance with IS:12235-2004 (part -3).

c. **SAMPLING AND CRITERIA FOR CONFORMITY-**

i The sampling procedure and the criteria for conformity shall be as per Annex D of IS :4985 – 2000.

ii The scale of sampling for visual and dimensional requirement shall be as per Table No.13 of IS:4985 – 2000 or as directed by Engineer – In – Charge. The sampling shall be made on random basis, from a lot manufactured. The samples required for testing shall be taken as directed by Engineer – In – Charge or his representative.

iii When subjected to internal hydrostatic pressure test in accordance with the procedure given in IS:12235-2004 (Part 8) the pipe shall not fail during the prescribed test duration. The temperatures and duration of test shall conform to the requirements given in the table mentioned below. The tests shall be carried out not earlier than 24 h after the pipes have been manufactured.

d. **REQUIREMENTS OF PIPES FOR INTERNAL HYDROSTATIC PRESSURE TEST-**

| Test | Test Temp. (Min.) $^0$C | Test Duration (Min. holding time) (h) | Test Pressure (Min.) MPa |
|---|---|---|---|
| (1) | (2) | (3) | (4) |
| Type Test | 60 | 1000 | 1.16xPN(MPa) |
| Acceptance | 27 | 1 | 4.19xPN(MPa) |

The pipes under test shall show no signs of localized swelling, seepage cracking, leakage or weeping and shall not burst during the prescribed test period.

During execution if required the sampling of pipes shall be made from the procured, tested and delivered lot of pipes at site randomly. The same shall be tested for the tests mentioned in above Para the CONTRACTOR shall have to borne all the cost of testing in such a case over and above the cost of regular testing.

e. **TYPE TEST-**

The type test shall be carried out as per IS: 12235 - 2004 and its latest revision/ amendments. The type tests are intended to prove the suitability and performance of anew composition, a new technique or a new size of a pipe. Such tests, therefore, need be applied only when a change is made in Polymer composition or method of manufacture, or when a new size of pipe is to be introduced. Engineer–In–Charge or his representative may call for the fresh samples for the type tests if required.

**B. HDPE PIPES-**

**a.** The General requirement relating to the manufacture of HDPE pipes shall be confirming to IS: 4984 - 1995 and its latest revision /amendments.

i. The dimension, material composition, tests etc shall be as per IS:12235 – 2004 and its latest revision/ amendments.

ii. HDPE pipes shall be marked with ISI certification mark.

iii. The pipe dimensions and tolerances shall be as per latest revisions and amendments of IS 12235 -2004. (Part1) & IS 4984-1995

**b. TESTS-**

The following tests as per IS: 12235-2004 and it's latest revision/amendments will be carried out by the agency .

i. Dimensions (Inside and outside diameter, Wall thickness and Length of pipe) as per Clause No. 6 of IS:4984-1995

ii. Visual appearance as per Clause No. 7 of IS: 4984-1995

iii. Hydraulic Characteristics as per Clause No. 8.1 of IS: 4984-1995

iv. Reversion test as per Clause No. 8.2 of IS: 4984-1995

v. Density test as per Clause No. 8.4 of IS: 4984-1995

vi. Carbon Black Content shall be within 2.5±0.5 Percent as per Clause no. 8.6 of IS : 4984-1995

vii. Internal hydrostatic pressure in accordance with IS: 12235-2004 (part–8), pipe shall not burst during the prescribed test duration.

viii. The wall of the wall of the plain pipe shall not transmit more than 0.2% of visible light falling on them when tested in accordance with IS:12235-2004 (part -3).

**c. SAMPLING, FREQUENCY OF TEST AND CRITERIA FOR CONFORMITY-**

**i.** The sampling procedure and the criteria for conformity shall be as per IS :4984 – 1995.

**ii.** The scale of sampling for visual and dimensional requirement shall be as per Table No.7 of IS:4984 – 1995 or as directed by Engineer – In – Charge. The sampling shall be made on random basis, from a lot manufactured. The samples required for testing shall be taken as directed by Engineer – In – Charge or his representative.

**iii.** When subjected to internal hydrostatic pressure test in accordance with the procedure given in IS:12235-2004 (Part 8) the pipe shall not fail during the prescribed test duration. The temperatures and duration of test shall conform to the requirements given in the table mentioned below. The tests shall be carried out not earlier than 24 h after the pipes have been manufactured.

**d. REQUIREMENTS OF PIPES FOR INTERNAL PRESSURE CREEP RUPTURE TEST-**

| Test | Test Temp. (Min.) $^0$C | Test Duration (Min. holding time) (in hours) | Test Pressure (Min.) MPa | | |
|---|---|---|---|---|---|
| | | | PE 63 | PE 80 | PE 100 |
| (1) | (2) | (3) | (4) | (5) | (6) |
| Type Test | 80 | 165 | 3.5 | 4.6 | 5.5 |
| Acceptance | 80 | 48 | 3.8 | 4.9 | 5.7 |

**e. Type Test**

The type test shall be carried out as per IS: 12235 - 2004 and its latest revision/ amendments. The type tests are intended to prove the suitability and performance of anew composition, a new technique or a new size of a pipe. Such tests, therefore, need be applied only when a change is made in Polymer composition or method of manufacture, or when a new size of pipe is to be introduced. Engineer–In–Charge or his representative may call for the fresh samples for the type tests if required.

**C. LAYING OF PIPES**

**i. UNDERGROUND INSTALLATION OF UPVC PIPE:** Generally, the width of the trench should be minimum dimension compatible with safe working and the satisfactory laying, jointing and bedding of pipe as per drawing or as directed by Engineer – In – Charge. The depth of the trench shall atleast be 03 feet from ground level plus diameter of pipe or as directed by Engineer – In –Charge. As excavation proceeds, all unstable trench walls need to be supported as per requirement is mandatory for trenches of 03 feet or deeper. The cost for this is incorporated in the relevant item of excavation of pipe line and no extra payment shall be made / entertained for this activity. Bed of the trench shall be well dressed and shall be free from clods. If any stones or other objectionable solid material met with during excavation of trench at bottom, it should be removed and if required the bed should be leveled with selected soil available from the excavation of the trench.

**ii. PREPARATION FOR PIPE LAYING:** Pipes shall be joined to form a single long length above ground prior to staking into the trench as per site situation or as directed by Engineer – In – Charge. To prevent scratches on surface of pipe / damage to pipe of the road surface, pipe rollers should be used. Before commencing of pipe laying into the

trench a check should be made for deep cuts, scratches or other damages in the pipe and the fusion joint system is sufficiently cooled.

iii. **PIPE LAYING:** The pipes shall be laid in proper line and level as per drawing or as directed by Engineer – In–Charge. Gradual changes in direction of polyethylene can be accommodated by pipe deflection but every effort should be made to keep the pipe as central as possible within the trench to enable correct side fill compaction. Similar care should be taken when any distortion of the coiled pipe has occurred.

**D. JOINTING OF PIPES-**

**i PREPARING JOINTS-**

The pipes shall be jointed by flush joint as instructed by the Engineer-In-Charge. Caulking space shall be as per relevant IS code according to the diameter of the pipes. The next pipe shall then to be pressed against the first so that the recess between the end of first pipe and that of the second properly fills with Synthetic ring and both pipe shall pressed against each other properly. The joints shall be smooth finished. The CONTRACTOR shall have to make sufficient room for making the joints leak proof at the bottom of joint by excavating the earth as per requirement. But due care shall be required during the backfilling in that portion. No extra payment shall be made for making sufficient room for the jointing of pipes at bottom of joint.

**ii CONNECTIONS THROUGH WALLS OF WELLS/WATER SOURCES-**

Pipe may have to go through masonary walls of wells/water sources. In such a case, the pipe should have a puddle flange welded (if required) around the pipe to ensure a leak proof joint between the pipe and the masonary well wall**.**

**E. TESTING OF PIPE LINE-**

i **INSPECTION AND TEST AFTER ERECTION-**

In addition to the progressive supervision and inspection by the Engineer in charge or his representative, the CONTRACTOR shall offer for inspection to Engineer-in-Charge or his representative, the complete erected or its parts on which tests are to be carried out.

After such inspection by Engineer-in–charge or his representative, the CONTRACTOR shall have to carry out the testing for leakage/seepage from pipe line /structures in the presence of Engineer – In – Charge or his representative. All the structures shall be observed, checked and tested for leakage and constructional defects.

ii **TESTING-**

a. The length of pipeline to be tested shall be the length between well to well or as directed by Engineer – In – Charge. Generally for sub-minor the testing shall be carried out for full length at a time, if length of sub-minor is less than 1.0 km and for more length of sub-minor the testing shall be carried out in two stages as directed / decided by Engineer – In – Charge. The CONTRACTOR shall have to make all the arrangement of water for testing, labours, supervisory staff, etc. for the period of testing. The necessary arrangement for plugging of opening in the wells/water Sources (end well of reach under testing) shall be made by the CONTRACTOR at his cost. After testing CONTRACTOR shall have to remove the plugging at his cost, but care should be taken that no damage will occur to the work executed. If any damage will occur to any parts of work executed the same shall be required to be repaired by the CONTRACTOR at his cost to the satisfaction of Engineer – In – Charge.

b. Backfilling of pipeline trenches can be done before testing of pipe line.

(I) **INITIAL FILLING** The water shall be filled in the portion under testing upto predetermined level and shall be continuously maintained at predetermined level at predetermined locations (wells/water Sources) for 48 hours. The purpose of initial filling shall be to provide sufficient time/water for absorption in the masonary structures (wells/water Sources).

(II) **OBSERVATION/CHECKING/TESTING FOR LEAKAGE** The level of water surface shall be measured after 48 hours of initial filling and thereafter at an interval of 24 hours for at-least 5(Five) days. During the testing the joints of pipe line shall be observed and checked, if any leakage found, the pipe shall be emptied out by the CONTRACTOR at his cost and shall be rectified at his cost. The testing procedure shall be repeated, till the rectification of the damages/defects/leakages are of the acceptable engineering standard.
During the testing after initial filling the level of water surface in the wells/water Sources under consideration shall be measured.

Work of UGPL mains/sub-mains shall be inspected by CREDA officials/third party and payments shall be done after getting approval of CREDA Officials. Modalities of Third Party Inspection shall be separately decided and given by CREDA.

**F. BACK FILLING OF TRENCHES-**

i Trenches shall be kept free from water until the material in the joints has hardened. Walking or working on the completed pipe shall not be permitted until the trenches have been backfilled so as to arrive at the original ground level after sufficiently compacting each layer of uniform thickness of 15 cm to 23 cm.

ii Trenches shall be backfilled after pipe has been laid subject to the condition that jointing material has hardened. Only selected material shall be used for back filling. Filling of trenches shall be carried out simultaneously on both sides of pipe in such a manner that unequal pressure does not occur.

iii After backfilling and during the defect liability period if any settlement will be observed in backfilling on alignment of pipe the same shall have to be attended by the CONTRACTOR at his cost.

## 4. SPECIFICATION FOR G.I. CHAIN FENCING-

Fabrication supply and installation of fencing of 10 gauge G.I chain link wire mesh of 75X75 mm opening, fitted with 50X50X6 mm vertical M.S. Angle at spacing of 2750 mm & 35X35X5 mm horizontal M.S. Support. Every set of fencing will have one M.S. Angle framed gate with same chain link wire mash with locking arrangement and two extra posts. Three lane barbed bolts, washer and clit as per enclosed design drawing and specification with two coat steel primer zink chromate and one coat silver/aluminium paint of standard brand with installationand fitting of fencing with grouting the poles of P.C.C. 1:2:4 of size 450X450X750 mm. for given requirement with complete civil material.

## 5. SPECIFICATION AND DETAILS OF BUFFER/SUMP/INTAKE OR JACK WELL-

a. Inner Diameter - 3m.
b. Outer Diameter - 3.6m.
c. Height 6m and 3m. Control Room (Bricks)

d. Total Height - 9m.
e. Re-inforcement, as per drawing - 16mm, 12mm, 10mm and 8mm, Grade Fe-415, TMT Bars
   i. IS:1786:208:BIS Standards.
   ii. 0.2% Proof Stress, Yield Stress ($N/mm^2$) - 415.0, Tensile Strength - 485.
f. Cement should be as per IS: 1489, Portland Pozzolana Cement
g. M20 Grade Concrete should be used.
h. Sand and Aggregates should be use as per IS: 383 (2016)
i. All materials should be as per IS: and C.G. PWD Standards
j. Pipe Should be as per IS: Standards. Hume Pipe IS:458, NP2 or NP3
   (OR) UPVC, HDPE, GI, DI Pipes can be used with permission of Department.
k. Scaffolding should be safe, as per IS standards

## 6. Detailed Specifications of BOS-

| SN | Components | Specification |
|---|---|---|
| 1 | SS theft proof Nut Bolt | **SS304** anti theft Nut bolt with washer. |
| 2 | MS and SS Nut bolt and washer | MS with SS polish nut bolt and washer for main pole and other are SS nut bolt. |
| 3 | Conduit pipe/ black drip pipe | **2mm** thick PVC conduit pipe ISI make or black drip pipe for covering panel wiring. |
| 4 | Cable Tie | UV protected cable tie. |
| 5 | Instruction manual | Do & Don'ts, O&M instruction after Installation with SI,DO and CREDA toll free number etc. |
| 6 | Sticker | As per CREDA design |

## 7. Other considerations-

**A. REJECTION OF THE SYSTEM OR SYSTEM COMPONENTS-**

If any leakage found during testing of pipe line, CONTRACTOR will have to attend immediately and rectify at his cost within 5 (Five) days. If CONTRACTOR fails to rectify the defect the entire length of pipe line between two adjacent wells/water Sources shall be rejected and not accepted. The payment shall not be made for the rejected work. The difference in water level during testing shall be within the tolerance limit as specified above, otherwise the work shall not be accepted and paid. If any intermediate payment made to the CONTRACTOR for portion under rejection, the same shall be recovered from the outstanding dues of the CONTRACTOR

**B. MONSOON DAMAGES-**

Damages due to rain or flood to UGPL(Under ground Pipeline) or in foundation of structure or Any civil work shall have to be made good by the CONTRACTOR till the work is finally handed over to the Concerned Gram Panchayat in presence of CREDA Officials. The responsibility of de-silting and making good the damages due to rain or flood rests with the CONTRACTOR , throughout the defect liability period of work and not only limited to earthwork. No extra cost is payable for such operations to protect the work done during the construction and the CONTRACTOR shall therefore have to take all necessary precautions to protect the work done during the construction period. The provision made in this Para shall be applicable to all the components of the work under this contract up to defect liability period of the entire work. The CONTRACTOR shall take all precautionary measures well prior to on set of monsoon to prevent entry of flood water in UGPL and structures on it from drains, nallas, river and other area. However any damage done to the work or silting or slush caused shall have to be attended by the CONTRACTOR without any extra cost to CREDA and no time limit sanction shall be enter for the work.

During monsoon the CONTRACTOR shall make available the machinery such as pumps, excavators, dozers, rollers etc. and skilled and unskilled manpower to attend the emergency conditions of flood inundation.

The cost for such operations shall not be paid separately. The CONTRACTOR shall take all necessary precautions to prevent the entry of rain/flood water during monsoon in the pipe line and structures on it.

**C. MISCELLANOUS-**

a. The contractor shall be responsible to provide all facilities for water distribution to all concerned beneficiaries (whether the provision is mentioned or not in terms & condition of tender).
b. Before starting the work, contractor / Tenderder shall be responsible to make an action plan with inspection of site, measurements and verification of all aspects of work.
c. To prevent from any possibilities of accident during the work the contractor / Tenderder shall be responsible for cleaning the surface of work area regularly, if any kind of accident occur during the work the contractor / Tenderder shall be responsible for the same.

## SECTION-5
## ANNEXURE, SPECIFICATION, FORMS

ANNEXURE – I

### PART-A
### (EXPERIENCE CERTIFICATE ON THE OFFICIAL LETTER HEAD OF CONCERNED GOVERNMENT DEPARTMENT WITH SEAL AND SIGN BY AUTHORIZED SIGNATORY)

Ref. No…….....……. Date……...……..

## CERTIFICATE OF EXPERIENCE - OFF GRID SPV PUMPS

This is to certify that **Name of Bidder, Address of Registered Office** has successfully completed the work of design supply, installation & commissioning of **…….....Nos**. Off grid SPV Pumps (…….....…..Scheme) against various Sanction of Name of Agency at various locations in…….....……State, as per following details –

| Capacity & Type of SPV Pumps (HP / AC / DC / Submersible / Surface) | Year & Scheme | Total no. of Pumps | Remarks |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| **Total -** | | | |

This certificate is being issued against the request of **M/S** _____**.,** for their intent for participation in the following Bid:-

| S. No. | Bid Number |
|---|---|
| 1 | **105525/CREDA/SCIP&IGGY/RE-VI/2022 Dated: 29-07-2022** |

This workmanship and performance of the above installed systems are found satisfactory and are in successful operation.

**Seal & Sign**
**(Authorised Signatory)**

ANNEXURE –I

## PART-B

**(EXPERIENCE CERTIFICATE ON THE OFFICIAL LETTER HEAD OF CONCERNED GOVERNMENT DEPARTMENT WITH SEAL AND SIGN BY AUTHORIZED SIGNATORY)**

Ref. No…….....……. Date……....……..

## CERTIFICATE OF EXPERIENCE - WATER DISTRIBUTION NETWORK

This is to certify that **Name of Bidder, Address of Registered Office** has successfully completed the work of design supply, installation & commissioned of **…....Mtrs.** Pipe line work under mini/ micro irrigation projects (…..…..Scheme) against various Sanction of Name of Agency at various locations in…….....……State, as per following details –

| Length of Pipe line work under mini/ micro irrigation project | Year & Scheme | Total mini/ micro irrigation project of Pipe line work | Cumulative Length of pipe line (Mtrs.) |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| **Total -** | | | |

This certificate is being issued against the request of **M/S** _____**.,** for their intent for participation in the following Bid:-

| S. No. | Bid Number |
|---|---|
| 1 | **105525/CREDA/SCIP&IGGY/RE-VI/2022 Dated: 29-07-2022** |

This workmanship and performance of the above installed systems are found satisfactory and are in successful operation.

**Seal & Sign**
**(Authorised Signatory)**

ANNEXURE –I

## PART-C

**(EXPERIENCE CERTIFICATE ON THE OFFICIAL LETTER HEAD OF CONCERNED GOVERNMENT DEPARTMENT WITH SEAL AND SIGN BY AUTHORIZED SIGNATORY)**

Ref. No…….....……. Date……...……..

# CERTIFICATE OF EXPERIENCE – CIVIL WORKS UNDER DRINKING WATER/IRRIGATION PROJECT

This is to certify that **Name of Bidder, Address of Registered Office** has successfully completed the work of design supply, installation & commissioned of **…....no.** intake well for drinking water/ irrigation projects (…..…..Scheme) against various Sanction of Name of Agency at various locations in…….....……State, as per following details –

| Project Drinking water/ irrigation project | Year & Scheme | Total no. of Drinking water/ irrigation project | Quantity of civil works (in cu Mtr.)Under Drinking water/irrigation project | Remarks |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| **Total -** | | | | |

This certificate is being issued against the request of **M/S** _____**.,** for their intent for participation in the following Bid:-

| S. No. | Bid Number |
|---|---|
| 1 | **105525/CREDA/SCIP&IGGY/RE-VI/2022 Dated: 29-07-2022** |

This workmanship and performance of the above installed systems are found satisfactory and are in successful operation.

**Seal & Sign**
**(Authorised Signatory)**

Annexure -II

# CONSORTIUM AGREEMENT

This Consortium Agreement executed on this ……. Day of …….. 2022

**BETWEEN**

**M/S ……**, a Company/Proprietorship Firm/Partnership Firm incorporate under the Law of companies Act 1956/2013 and having its registered/principal office at …….. (GST No……) through its proprietor ……. S/o …….. (herein after called the "Partner-I"/ "Lead Partner" which expression shall include its successors, executors and permitted assigns)

**AND**

**M/s ……** a Company/Proprietorship Firm/ Partnership Firm under Firm (GST No. …… ) and having its registered/principal office at …….. Through its Partner Mr. …….. S/o …… (herein after called the "Partner–II"/"Second Partner" which expression shall include its successors, executors and permitted assigns)

This agreement is for the purposes of submission of bid as per the **TENDER DOCUMENT** No. **105525/CREDA/SCIP&IGGY/RE-VI/2022 Dated: 29-07-2022** and entering into a contract in case of award for the work of Survey, Design, Supply, Installation & Commissioning of Solar Photo Voltaic Irrigation Pumps of various capacities with five years onsite warrantee, CMC & insurance anywhere in the state of Chhattisgarh for **Solar Community Irrigation Project & Indira Gaon Ganga Yojana** of **CHHATTISGARH STATE RENEWABLE ENERGY DEVELOPMENT AGENCY (CREDA)**

**AND WHEREAS** as per Tender document, Consortium bids will also be considered by the Owner provided they meet the specific requirements in that regard.

**NOW THIS INDENTURE WITNESSETH AS UNDER –**

In consideration of the above premises and agreements all the partners to this Consortium do hereby now agree as follows:

**1.** We the partners in the Consortium hereby confirm that the name and style of the Consortium shall be **"…….. / ……"** "Consortium."

**2.** FORMATION AND PRINCIPLE PLACE OF BUSINESS

**FORMATION -**

The partner of the consortium do hereby form a Consortium pursuant to the laws of state of Chhattisgarh in order for the consortium to carry on the purposes for which provision is made herein

**PRINCIPAL PLACE OF BUSINESS -**

The Consortium Partner shall maintain principal place of business at …….. The partners of the consortium may re-locate its office from time to time or have additional offices as the partners may determine

**3. PURPOSE OF THE CONSORTIUM -**

The object of the consortium to bid and perform Tender No. **105525/CREDA/SCIP&IGGY/RE-VI/2022 Dated: 29-07-2022** from CHHATTISGARH STATE RENEWABLE ENERGY DEVELOPMENT AGENCY (CREDA) For Survey, Design, Supply, Installation & Commissioning of Solar Community Irrigation Project & Indira Gaon Ganga Yojana with Five Years on Site warrantee, CMC & Insurance anywhere in the state of Chhattisgarh to deal with the same in any manner what so ever.

**4. TERM -**

The term of the consortium shall commence as of the date hereof and shall be terminated and dissolved upon the earliest to occur of (i) on mutual understanding of partners by executing separate agreement regarding dissolution of consortium (ii) the unanimous agreement of the partners (iii) the order of a court of competent jurisdiction (iv) Competition of the above mention tender

**5. PERCENTAGE OF PARTICIPATION -**

| CONSORTIUM PARTNER | PARTNER | PERCENTAGE |
|---|---|---|
| 1) M/S …… | Lead Partner ( Partner 1) | ..... |
| 2) M/s …….. | Other Partner ( Partner 2) | ..... |
| **TOTAL -** | | |

**6.** PARTICIPATION -
Both the partners have decided to perform the above mention work of CREDA in their above proportionate work.

**7.** The Lead Member is hereby authorized by the second Member of the Consortium to bind the Consortium and receive instructions for and on their behalf. For this purpose second member will submit a duly signed Power of Attorney.

**8.** The lead partner of consortium will be solely responsible for any liability, penalty, CMC and other terms and conditions mentioned in this tender document.

**9.** The Lead Member shall be liable and responsible for ensuring the Solar Community Irrigation Project & Indira Gaon Ganga Yojana and collective commitment of each of the members of the Consortium in discharging all of their respective obligations. Furthermore lead member shall be liable for fulfilment of each terms and conditions of the tender document. Each Member further undertakes to be Solar Community Irrigation Project & Indira Gaon Ganga Yojana liable for the performance of its part of the obligations without in any way limiting the scope of collective liability envisaged in this Agreement.

**10.** Subject to the terms of this Agreement, the all member shall be responsible for providing technical and financial support and responsible for execution of project as per agreement to be signed.

**11.** In case of any breach of the said Contract by any of the partners of the CONSORTIUM, we hereby agree to be fully responsible for the successful execution/performance of the Contract in accordance with the terms of the Contract.

**12.** Further, if the Owner suffered any loss or damage on account of any breach of the Contract or any shortfall in the completed equipment/ plant, meeting the guaranteed performance parameters as per the technical specifications/ contract documents, the Lead Partner and Second Partner of these presents undertake to promptly make good such loss or damage caused to the Owner, on the Owner's demand without any demur.

**13.** The financial liability of the partners to this Consortium Agreement, to the Owner with respect to the any or all claims arising out of the performance or non-performance of the Contract shall, however be not limited in any way so as to restrict or limit the liabilities of either of the partner.

**14.** This Consortium Agreement shall be governed, construed and interpreted in accordance with Laws of India. Courts of Raipur (C.G.) shall have exclusive jurisdiction in all matters arising there under.

**15.** It is further agreed that this CONSORTIUM Agreement shall be irrevocable and shall form an integral part of the Contract and shall continue to be enforceable till the Owner discharges the same. It shall be effective on the date first above mentioned for all purposes and intents.

IN WITNESS WHEREOF, the partners to this Consortium agreement have, through their respective authorized representatives, have executed these presents and affixed their hands and common seal of their respective companies on the day, month and year first above mentioned.

**FOR, M/s ……**

( MR. ……)
Lead Partner/Partner-1

WITNESS -
1……..
1……..

**FOR, M/s …….....……**

(MR. ……..)
Other Partner/Partner-2

WITNESS -
2 .....
2 .....

**ANNEXURE –III**

## FORMAT FOR THE AFFIDAVIT

(Note: This affidavit should be on a non-judicial stamp paper of Rs. 100/- and shall be attested by Magistrate/Sub-Judge/ Notary Public)

I,…….(Name of the bidder authorized representative of the bidder) son/ daughter of…… resident of …… (Full address), aforesaid solemnly affirm and state as under:

1. I hereby certify that all the information furnished with the bid submitted in response to Tender/bid No.105525/CREDA/RE-VI/SCIP&IGGY/2022 dated: 29.07.2022 issued by Chhattisgarh State Renewable Energy Development Agency (CREDA) (authority inviting bids) for Survey, design, supply, installation, and commissioning of Solar Community Irrigation Scheme & Indira Gaon Ganga Yojana and with all allied works with five years COM, onsite warrantee, Insurance for anywhere in the State of Chhattisgarh state (name and identification of work) are true and correct.
2. I hereby certify that I have been authorized by..... (Company name) to sign on their behalf, the bid mentioned in Sr.No.1 above.*
3. Information furnished in the bidding documents is correct in all respects to the best of my knowledge and belief.
4. The near relations, as per clause 30(A) in Section - 02, in CREDA, are not in employment of the firm/company. (Note:-By the term near relatives is meant Wife, Husband, Parents and Son, Brother, Sister, Brother–in-law, Father-in-law, Mother-in-law etc.) (if working mention the name/names)

   ……

   ……..……..
5. The name of near relative (if any) as per Clause 31(B) who retired/removed within the last two years. (If None, clearly State None)

   ……

   ……
6. No near relative is working as Financial Accountant in the CREDA. (if working mention the name)

   ……

   ……..……..
7. No person is working in the company in any capacity, who are near relatives to any Officer in Chhattisgarh State Renewable Energy Development Agency (CREDA) (If working mention the name)

   ……

   ……..…….
8. Our company/firm/ or otherwise is not under the clarification of ineligibility for corrupt and fraudulent practices by the Central Government, the State Government or any public undertaking, autonomous body, authority by whatever name called under the Central or the State Government as mention in clause 1(F) of tender document.

9. I hereby authorize the CREDA Officials to get all the documents verified from appropriate sources (s).

**Deponent**

Place: ……..

Date: ……

* Not applicable if the bidder is an Solar Community Irrigation Project & Indira Gaon Ganga Yojana and is signing the bid on his own behalf.

**Verification**

I……. S/o……do here by affirm that contents stated in Para 1 to 09 above and contents submitted in technical & financial bid are true to the best or my knowledge and believe and are based on my/our record.

Verified that this date of …… at (Place)……

**Deponent**

**ANNEXURE-IV**

# CERTIFICATE OF QUARTERLY VISITS

(To be submitted by SI during CMC period)

(From ……. To ……)

This is to certified that we have extended preventive / routine maintenance and breakdown / corrective maintenance services for the pumping system, Water Distribution Network installed under SPV COMMUNITY IRRIGATION & INDIRA GAON GANGA YOJANA scheme at Village ....., District _____ and that the preventive / routine maintenance and breakdown /corrective maintenance work during the period (from _____ to_____) of the year _____ has been done properly to ensure functionality of the systems as specified in the Tender terms & conditions and agreement.
This is also to certify that ..... nos of systems are working satisfactorily out of ..... nos of total installed systems. The record of preventive / routine maintenance and breakdown / corrective maintenance work carried out by us is kept in our record at our service station.

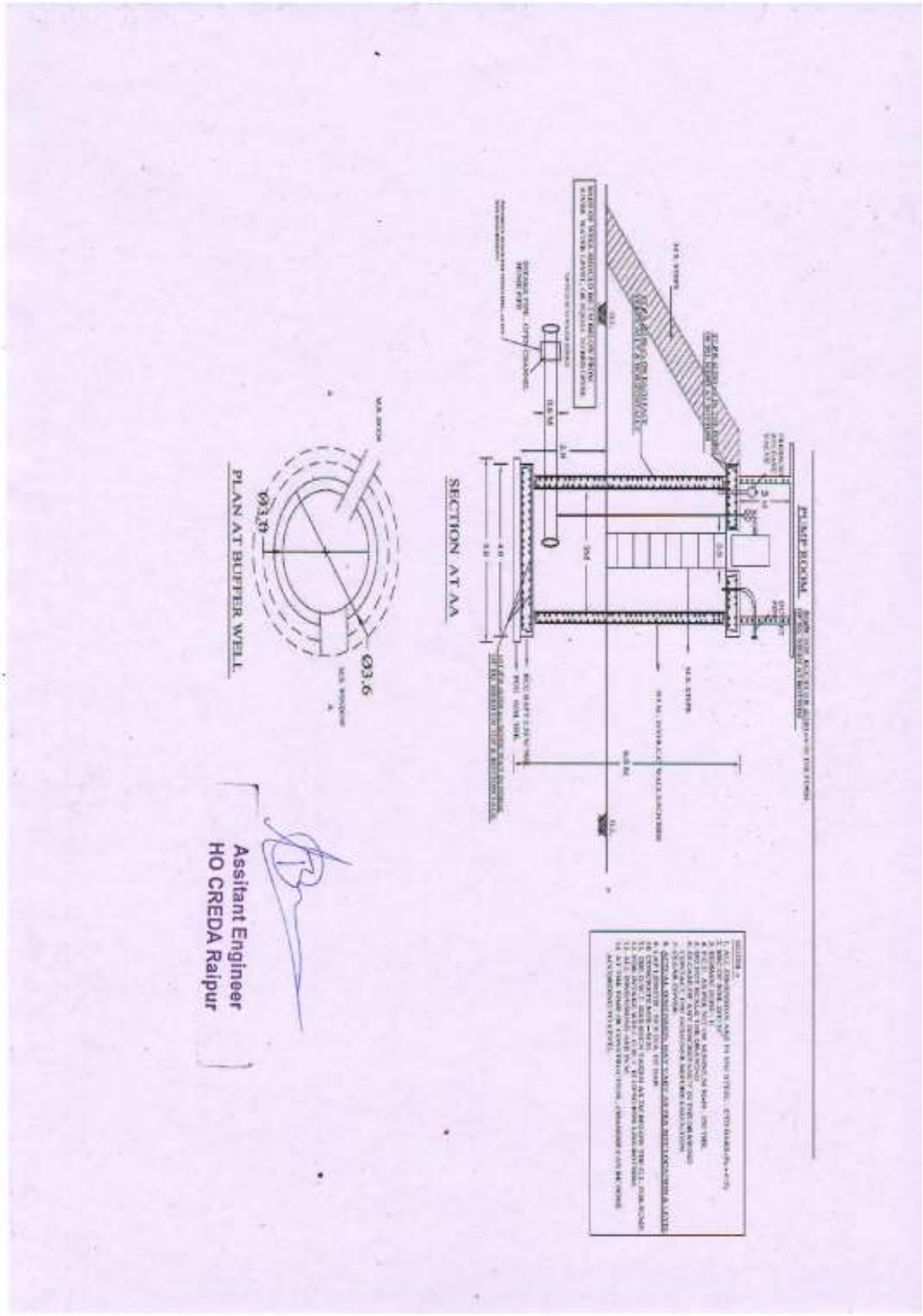
Signature, Name, Designation and Seal of System Integrator

Date : ……
Place : ……

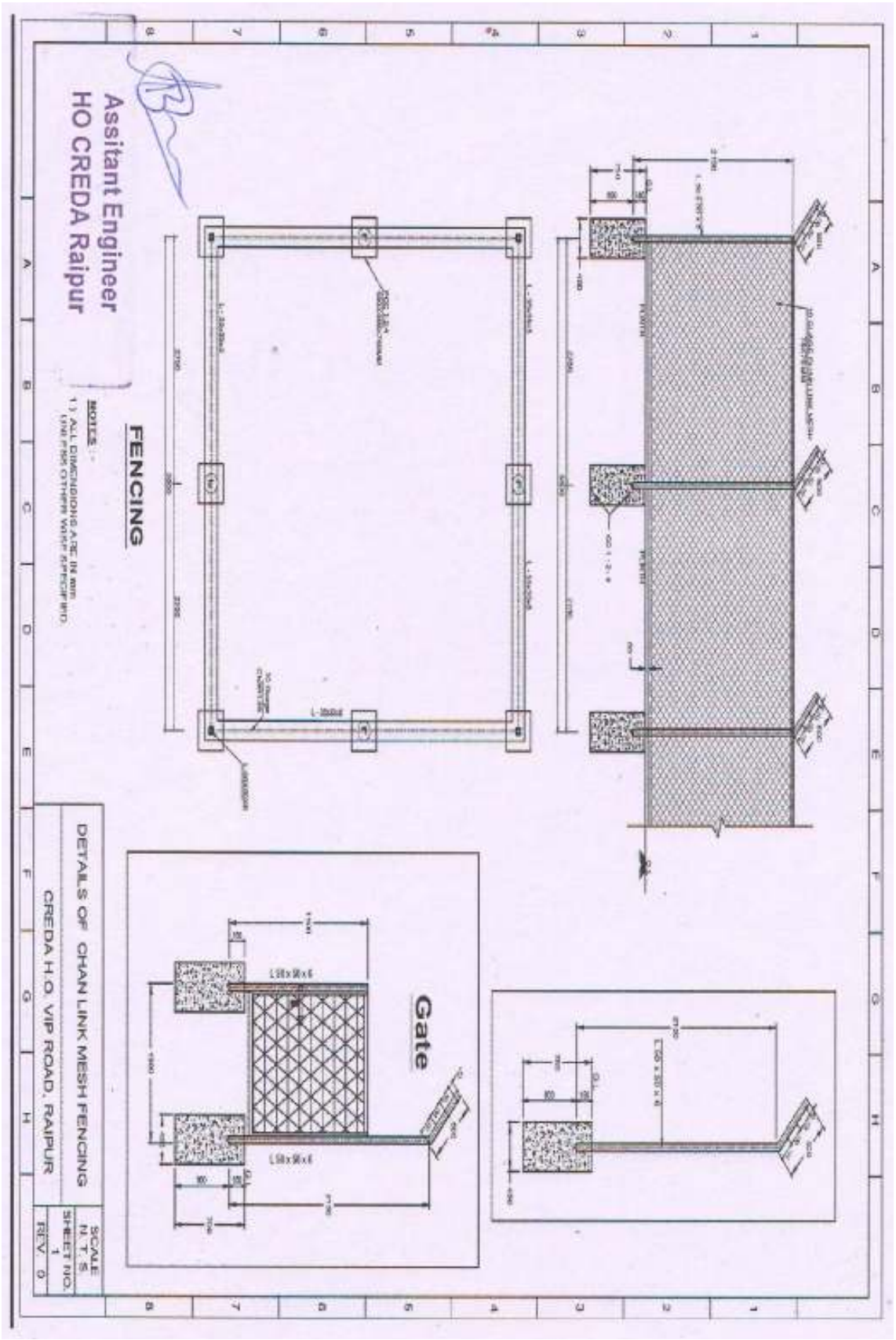
Signature, Name, Designation and Seal of District In-charge of CREDA

**ANNEXURE –V**

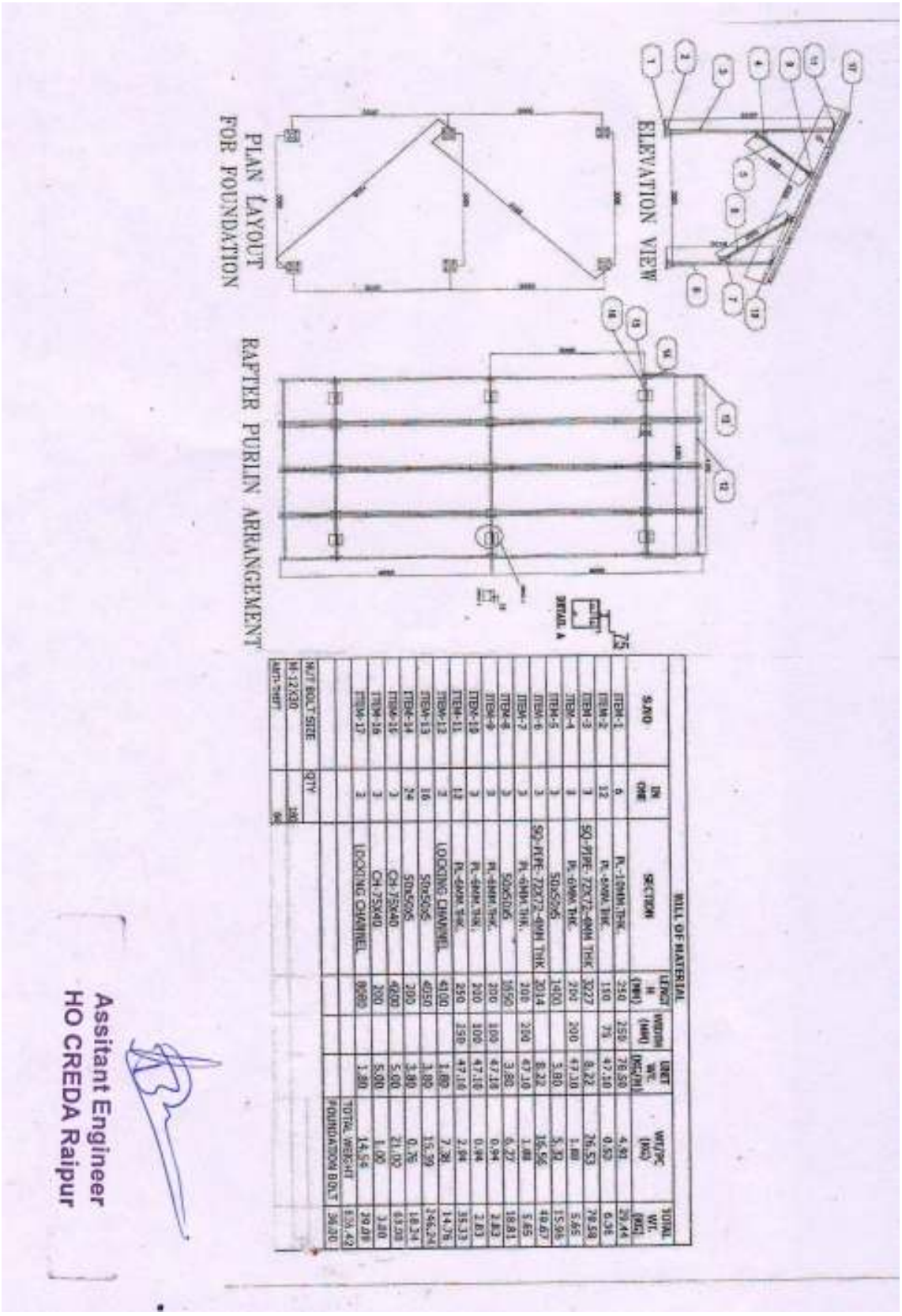
# SYMBOLIC DRAWING OF INTAKE/ BUFFER WELL



**Drawing of Fencing**



## DESIGN OF FIXED MMS & BOM

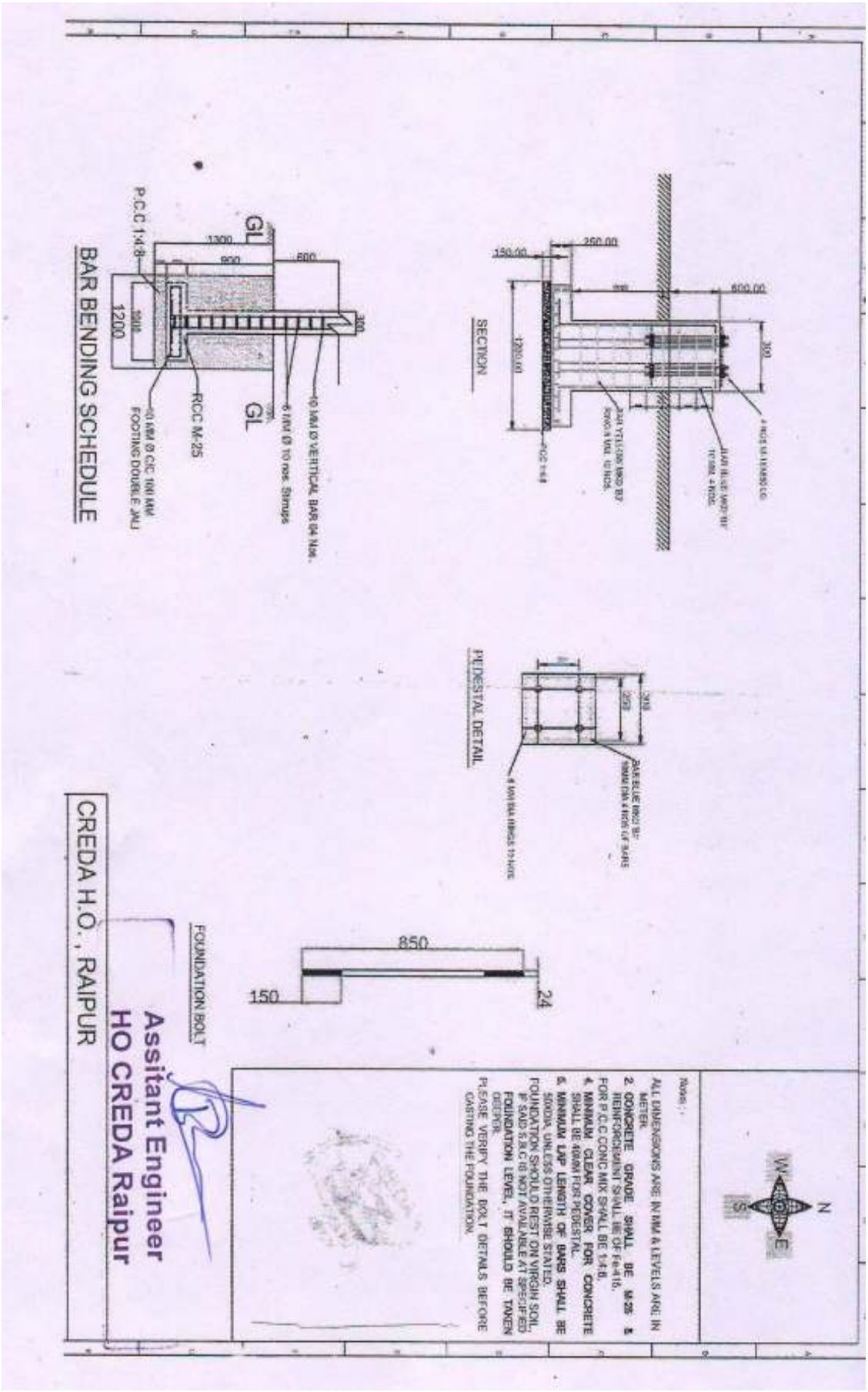



BILL OF MATERIAL

| S.NO | NO ONE | SECTION | LENGTH (MM) | WIDTH (MM) | UNIT WT. (KG/M) | WT/PC (KG) | TOTAL WT. (KG) |
|---|---|---|---|---|---|---|---|
| ITEM-1 | 6 | PL-10MM THK. | 250 | 250 | 78.50 | 4.91 | 29.44 |
| ITEM-2 | 12 | PL-6MM THK. | 110 | 75 | 47.10 | 0.52 | 6.34 |
| ITEM-3 | 3 | SQ-PIPE-72X72-6MM THK | 3227 | | 8.22 | 26.53 | 79.58 |
| ITEM-4 | 3 | PL-6MM THK. | 202 | 200 | 47.10 | 1.88 | 5.65 |
| ITEM-5 | 3 | 50x50x5 | 1401 | | 3.80 | 5.32 | 15.96 |
| ITEM-6 | 3 | SQ-PIPE-72X72-6MM THK | 2014 | | 8.22 | 16.56 | 49.67 |
| ITEM-7 | 3 | PL-6MM THK. | 202 | 200 | 47.10 | 1.88 | 5.65 |
| ITEM-8 | 3 | 50x50x5 | 1650 | | 3.80 | 6.27 | 18.81 |
| ITEM-9 | 3 | PL-6MM THK. | 200 | 100 | 47.10 | 0.94 | 2.83 |
| ITEM-10 | 3 | PL-6MM THK. | 200 | 100 | 47.10 | 0.94 | 2.83 |
| ITEM-11 | 12 | PL-6MM THK. | 250 | 250 | 47.10 | 2.94 | 35.33 |
| ITEM-12 | 2 | LOCKING CHANNEL | 4100 | | 1.80 | 7.38 | 14.76 |
| ITEM-13 | 16 | 50x50x5 | 4050 | | 3.80 | 15.39 | 246.24 |
| ITEM-14 | 24 | 50x50x5 | 200 | | 3.80 | 0.76 | 18.24 |
| ITEM-15 | 3 | CH-75X40 | 4200 | | 5.00 | 21.00 | 63.00 |
| ITEM-16 | 3 | CH-75X40 | 200 | | 5.00 | 1.00 | 3.00 |
| ITEM-17 | 3 | LOCKING CHANNEL | 6080 | | 1.80 | 14.54 | 29.08 |
| | | | | | | TOTAL WEIGHT | 836.42 |
| | | | | | | FOUNDATION BOLT | 36.00 |

| M/F BOLT SIZE | QTY |
|---|---|
| M-12X30 | 100 |
| NUT+WHT | 96 |

## Foundation Drwing for SCIP & IGGY



**ANNEXURE – VI**

# e - Price Bid
# PART-A
## (Schedule of Rates for SPV AC Surface Pumps)

*(e-bidding as per Specifications & Scope of Work of* No. ***105525/CREDA/RE-VI /SCIP-IGGY/Tender/2022*** Dated : 29.07.2022)

Survey, Supply, Installation and Commissioning of **Solar Photovoltaic Pumps including five years of comprehensive on-site warrantee and comprehesive operations & maintenance** anywhere in the State of Chhattisgarh.

| SN | Item Code | Particulars | Unit | Unit Rate for Supply of Materials and components at site (in Rs.) | Unit Rates for Installation, Commissioning of Items/work including civil and other allied works at Site (in Rs) | Total Rate (in Rs.) | CMC Cost for 5 Year (in Rs.) |
|---|---|---|---|---|---|---|---|
| **1** | **2** | **3** | **4** | **5** | **6** | **7=5+6** | **8** |
| 1 | A 1 | Supply, I& C of 7.5 HP/7800 watt AC Solar Surface Pump | Nos. | | | | |
| 2 | A 2 | Supply, I& C of 10 HP/9600 watt AC Solar Surface Pump | Nos. | | | | |
| 3 | A 3 | Supply, I& C of 15 HP/14400 watt AC Solar Surface Pump | Nos. | | | | |
| 4 | A 4 | Supply, I& C of 20 HP/24000 watt AC Solar Surface Pump | Nos. | | | | |
| 9 | A 9 | Spare Pump of 7.5 HP/7800 watt AC Solar Surface Pump | Nos. | | NA | | |
| 10 | A 10 | VFD Controller for 7.5 HP/7800 watt AC Solar Surface Pump | Nos. | | NA | | |
| 11 | A 11 | Spare Pump of 10 HP/9600 watt AC Solar Surface Pump | Nos. | | NA | | |
| 12 | A 12 | VFD Controller for 10 HP/9600 watt AC Solar Surface Pump | Nos. | | NA | | |
| 13 | A 13 | Spare Pump of 15 HP/14400 watt AC Solar Surface Pump | Nos. | | NA | | |
| 14 | A 14 | VFD Controller for 15 HP/14400 watt AC Solar Surface Pump | Nos. | | NA | | |
| 15 | A 15 | Spare Pumps of 20 HP/24000watt AC Solar Surface Pump | Nos. | | NA | | |
| 16 | A 16 | VFD Controller for 20 HP/24000watt AC Solar Surface Pump | Nos. | | NA | | |
| 17 | A 17 | G.I Chain Link fencing as per specification in tender | Meter | | | | |

**IMPORTANT INSTTRUCTION: Bidder has to upload duly filled, sealed and signed copy of the price bid in Envelop C of 'required attachements' on the e - bidding portal.**

Certified that rates quoted above are as per the requirement, specifications, and terms & condition mentioned in the bid document.

**Continued...**

Above rates are FOR anywhere in the State of Chhattisgarh inclusive of roadworthy packing, loading, unloading, all types of incidental expenses, insurance, duties and any other job required to properly execute the work with 5 years warrantee as mentioned in the bid document (Above rates applicable for pump models for each category as per MNRE and CREDA Specifications stated in Bid document). The GST payable on the bill produced for payment to CREDA shall be paid in addition to above quoted price as per rate of GST applicable at the time of billing.

(No other cost will be claimed above the price quoted & the applicable GST).

**Note: In this regard if there is any change in the composition ratio of goods and services by any Authority/ Courts, same shall be applicable.**

**There shall be no escalation of rates under any circumstances.**

**Signature of the Authorized Signatory : .....**

Seal of Company : .....

Date : .....

**NOTE: BIDDERS HAVE TO QUOTE GRAND TOTAL OF ALL THE ITEMS (I.E. PART A, COLUMN - 7) IN THE e-PRICE BID (BIDDING PORTAL).**

**[The grand total rate quoted as above must match with the total rate of Price Bid Part - A as uploaded in Envelope-C. In case of any discrepancy/mismatch in the total, such bid shall be rejected.]**

**ANNEXURE – VI**

# PART-B

## (for supply, installation, Commissioning &Testing of Water distribution network)

Schedule of Rates for Water distribution network of Solar Community irrigation Scheme & Indira Gaon Ganga Yojana.

*(e-bidding as per Specifications & Scope of Work of* No. ***105525/CREDA/RE-VI /SCIP & IGGY/Tender /2022*** Dated : 29.07.2022)

Survey, Supply, Installation & Commissioning and testing water distribution network of the Solar Community Irrigation System & Indira Gaon Ganga Yojana anywhere in the State of Chhattisgarh.

| SN | Particulars | Unit | Base rate of CREDA SOR (In %) | Rate for Supply & installation & Commissioning (In %) Above/ below | CMC Cost for 5 Years per system (In Rs.) |
|---|---|---|---|---|---|
| A | B | C | D | E | G |
| 1 | Survey, Supply, Installation & Commissioning and testing water distribution network of the Solar Community Irrigation System | % | 100 | | |

**IMPORTANT INSTTRUCTION: Bidder has to upload duly filled, sealed and signed copy of the price bid in Envelop C of 'required attachements' on the e - bidding portal.**

Certified that rates quoted above are as per the requirement, specifications, and terms & condition mentioned in the bid document.

Above rates are FOR anywhere in the State of Chhattisgarh inclusive of roadworthy packing, loading, unloading, all types of incidental expenses, insurance, duties and any other job required to properly execute the work with 5 years warrantee as mentioned in the bid document (Above rates applicable for pump models for each category as per MNRE and CREDA Specifications stated in Bid document). The GST payable on the bill produced for payment to CREDA shall be paid in addition to above quoted price as per rate of GST applicable at the time of billing.

(No other cost will be claimed above the price quoted & the applicable GST).

**Note: In this regard if there is any change in the composition ratio of goods and services by any Authority/ Courts, same shall be applicable.**

**There shall be no escalation of rates under any circumstances.**

**Signature of the Authorized Signatory : .....**

Seal of Company : .....

Date : .....

**ANNEXURE – VI**

# PART-C

## (For Supply, Installation & Commissioning and allied civil works)

Schedule of Rates for allied civil works of Solar Community Irrigation Scheme & Indira Gaon Ganga Yojana.

*(e-bidding as per Specifications & Scope of Work of* No. ***105525/CREDA/ /RE-VI /SCIP-IGGY/Tender/2022*** Dated : 29.07.2022)

Survey, Supply, Installation & Commissioning and tesing of all allied civil works of Solar Community irrigation Scheme & Indira Gaon Ganga Yojana anywhere in the State of Chhattisgarh.

| SN | Particulars | Unit | Base rate of CREDA SOR (In %) | Rate for Supply, installation & Commissioning (In %) Above/ below | CMC Cost for 5 Years (In % as per CREDA SOR) |
|---|---|---|---|---|---|
| A | B | C | D | E | F |
| 1 | Intake/Buffer well for Solar Pump | % | 100 | | |
| 2 | Platform for Solar Pump | % | 100 | | |
| 3 | Control Room | % | 100 | | |
| 4 | Any Other allied Civil work under the scheme | % | 100 | | |

**IMPORTANT INSTTRUCTION: Bidder has to upload duly filled, sealed and signed copy of the price bid in Envelop C of 'required attachements' on the e - bidding portal.**

Certified that rates quoted above are as per the requirement, specifications, and terms & condition mentioned in the bid document.

Above rates are FOR anywhere in the State of Chhattisgarh inclusive of roadworthy packing, loading, unloading, all types of incidental expenses, insurance, duties and any other job required to properly execute the work with 5 years warrantee as mentioned in the bid document (Above rates applicable for pump models for each category as per MNRE and CREDA Specifications stated in Bid document). The GST payable on the bill produced for payment to CREDA shall be paid in addition to above quoted price as per rate of GST applicable at the time of billing.

(No other cost will be claimed above the price quoted & the applicable GST).

**Note: In this regard if there is any change in the composition ratio of goods and services by any Authority/ Courts, same shall be applicable.**

**There shall be no escalation of rates under any circumstances.**

**Signature of the Authorized Signatory : .....**

Seal of Company : .....

Date : .....

**ANNEXURE – VII**

## STANDARDS FOR SOLAR POWERED IRRIGATION SYSTEMS

| Component | Standard | Description |
|---|---|---|
| 1. PV Module- Design | IEC 61215-1:2016 | Terrestrial Photovoltaic (PV)modules- Design qualification and type approval- Part 1 : Test requirements |
| | IEC 61215-1-1:2016 | Terrestrial Photovoltaic (PV) modules- Design qualification and type approval- Part 1-1 : Special requirements for testing of crystalline silicon photovoltaic (PV) modules |
| | IEC 61215-1-2:2016 | Terrestrial Photovoltaic (PV) modules- Design qualification and type approval- Part 2: Test procedures |
| 2. Module Testing | IEC 61701: 2011 | Salt mist corrosion testing of photovoltaic (PV) modules, wherever applicable |
| 3. PV Module Safety | IEC 61730-1:2016 | Photovoltaic (PV) module safety qualification- Part 1: Requirements for construction |
| | IEC 61730-2:2016 | Photovoltaic (PV) module safety qualification- Part 1: Requirements for testing |
| | UL 1703/ UL 61730 | PV module safety standards |
| 4. Junction Box/ Fuses/ Cut-Offs | IEC 62790: 2014 | Junction boxes for Photovoltaic modules – Safety requirements and tests |
| | UL 2579 | UL 2579: Low Voltage Fuses- Fuses for Photovoltaic systems, wherever required |
| 5. Connectors | UL 4248-18 | Fuse Holders- Part 18: Photovoltaic Systems |
| | IEC 62852: 2014 | Connectors for DC-application in photovoltaic Systems- Safety requirement test |
| 6. Controllers | UL 6703 | Connectors for use in Photovoltaic Systems |
| | IEC 61683:1999 | Photovoltaic Systems- Power Conditions-Procedure for measuring efficiency |
| | IEC 60068-2-1: 2007 | Environmental testing- Part 2-1: Tests- Test A : Cold |
| | IEC 60068-2-2: 2007 | Environmental testing- Part 2-1: Tests- Test B : Dry heat |
| | IEC 60068-2-14: 2009 | Environmental testing- Part 2-14, Test- Test-N: Change of temperature |
| | IEC 60068-2-30: 2005 | Environmental testing-Part 2:30 Tests -Db: Damp heat, cyclic (12 h+ 12 h cycle) |
| | IEC 60529 : 2013 | Degrees of protection provided by enclosures (IP Code) |
| 7. Wires, Cable and Cords | UL 1581 | Reference Standard for Electrical Wire, Cables and Flexible Cords |
| | UL 4703 | Photovoltaic Wire |

**Note :**

1. All pump systems mentioned under this tender should qualify the bench mark performance specified at specification for Solar Photo Voltaic Water Pumping Systems (Total water and Liter/Watt peak/Day requirement).
2. Submitted Test Reports / Acknowledgement should also include above standards.

**ANNEXURE – VIII**

**CREDA Logo to be pasted on SPV modules of SCIP & IGGY**

**ANNEXURE – IX**

# DRAFT AGREEMENT

CONTRACT AGREEMENT BETWEEN Chief Engineer Chhattisgarh State Renewable Energy Development Agency (**CREDA**) Raipur AND **M/s……** Represented by …**……..** THIS CONTRACT AGREEMENT against Tender No.105525/CREDA/SCIP&IGGY /RE-VI/2022 Dated: 29.07.2022 (also referred to as "Service Contract") is made on the ___th day of ____ 2022.

**BETWEEN**

(1) Chief Engineer Chhattisgarh State Renewable Energy Development Agency (**CREDA**) Raipur a society incorporated under the laws Society Registration Act 1973 , (1973 , Sr. No. 44 ) (with amendment from time to time) and having its Registered Office at VIP Road Near Energy Education Park, Village- Fundhar, Raipur and (hereinafter called "The Employer" and also referred to as "CREDA" )

**And**

(2) **……** Represented by **……**a company incorporated under the laws of Companies Act 1956/2013/ Partnership firm/ Proprietorship firm/Consortium **(**as applicable**,** with amendment from time to time ) and having its Principal place of business at **…….** and Registered Office at**……**hereinafter called "The Contractor" and also referred to as "**……"**

Whereas the contractor has offered to enter into contract with the said CREDA for the Supply of Solar Community Irrigation Scheme & Indira Gaon Ganga Yojana with its all allied works and for installation, commissioning and comprehensive operation & maintenance of Solar Community Irrigation Scheme with its all allied works with 5 Year Warranty.

Wide Tender No.105525/CREDA/RE-VI/SCIP&IGGY/2022 Dated: 29.07.2022 on the terms and conditions herein contained and the rates approved by the CREDA (Letter No. …….. dated ……. annexed here to) have been duly accepted and where as the necessary security deposit shall be furnished in accordance with the provisions of the tender document and whereas no interest will be claimed on the security deposits.

Now these presents witness and it is hereby agreed and declared by and between parties to these presents as follows -

**1)** The Contractor shall, during the period of this contract, that is to say from ……. to ..... or completion thereof, until this Contract shall be determined by such notice as is hereinafter mentioned, safely carryout, by means of labours employed at his own expenses and by means of tools, implements and equipment etc. to be supplied by him to his labour at his own expenses, for installation of "Solar Community Irrigation Scheme & Indira Gaon Ganga Yojana with its all allied works" as described in tender documents. (Annexed to the agreement).

**2)** The NIT (Notice Inviting Tender), Corrigendum to NIT, Notices, Bid documents (Qualifying, Technical and Financial), approved rates annexed hereto and such other additional particulars, undertaking, instructions, general conditions of contract, Scope of work, Technical specifications of Solar Community Irrigation Scheme with its all allied works and Annexure therein, engineering documents, detailed specifications of BOS & drawings, so far they relate to the Tender No.105525/CREDA/RE-VI/SCIP&IGGY/2022 Dated: 29.07.2022 as may be found requisite to be given during execution of the work shall be deemed and taken to be an integral part of the contract and shall also be deemed to be included in the expression "The Agreement or "The Contract "wherever herein used.

**3)** The contractor shall also supply the requisite number of workmen with means & materials as well as tools, appliances, machines, implements, vehicles for transportation, cartage etc. required for the proper execution of work within the time prescribed in the work orders and /or as per the tender conditions.

**4)** The Engineer in Charge or his authorized representative (s) shall be entitled at all reasonable times to inspect and supervise and test during installation and commissioning. Such inspection will not relieve the eligible SI from their obligations under this contract.

**5)** Material can be inspected before dispatch or in transit by the authorized representatives of CREDA at the factory at the cost of the eligible SI, if desired by CREDA. CREDA reserves right to inspect the material at Godowns / Temporary Stores before dispatch and also at works sites.

**6)** CREDA shall deduct TDS for Income Tax, applicable cess on Civil Work etc. under various acts and deposited with the appropriate authority. Costs and taxes before execution of agreement with CREDA so as to ensure tax deposition as per Government Rules accordingly.

**7) ELIGIBLE SYSTEM INTEGRATOR'S DEFAULT LIABILITY -**

CREDA may by written notice of default to the eligible SI, terminate the contract in circumstances detailed hereunder -

(a) If in the opinion of the CREDA, the eligible SI fails to complete the work within the time specified in the work order or within the period for which extension has been granted by CREDA to the eligible SI.

(b) If in the opinion of CREDA, the eligible SI fails to comply with any of the provisions of this contract.

(c) In the event of CREDA terminating the contract in whole or in part as provided in paragraph (a) above, CREDA reserves the right to engage another eligible SI or agency upon such terms and in such a manner as it may deem appropriate and the eligible SI shall be liable to CREDA for any additional costs or any losses caused to CREDA as may be required for the completion of erection of the Solar Community Irrigation System & Indira Gaon Ganga Yojana or for penalty as defined under this tender document until such reasonable time as may be required for the final completion of the work.

(d) In the event CREDA does not terminate the contract as provided in paragraph (a) the eligible SI shall continue performance of the contract, in which case he shall be liable to CREDA for penalty for delay as set out in this tender document until the work is completed.

**8) FORCE MAJEURE -**

The eligible SI shall not be liable for any penalty for delay or for failure to perform the contract for reasons of FORCE MAJEURE such as of God, acts of public, enemy, LWE problems, acts of government, cyclone, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes provided that if SI shall submit delay notice with appropriate cause of delay to the CREDA in writing within **15 days** of force majeure. CREDA shall verify the facts and may grant such extension as facts justify. Delay in supply of any accessories of Solar Community Irrigation System & Indira Gaon Ganga Yojana by the related vendors, to whom the Bidder has placed order, shall also not be treated as force majeure.

**9) REJECTION OF WORKS -**

In the event of any of the material supplied/work done by the eligible SI is found defective in material or workman ship or otherwise not in conformity with the requirements of this contract specifications, CREDA shall either reject the material and/or work and advise the eligible SI to rectify the same. CREDA may impose penalty for such rejection up to the 200% cost of the entire system. Habitual/repeated offenders shall be black listed/debarred to participate in the any Tender/ Activity of CREDA till further orders. The eligible SI on receipt of such notices shall rectify or replace the defective material and rectify the work free of cost. If the eligible SI fails to do so CREDA may -

**a)** At its option replace or rectify such defective materials and/or work and recover the extra cost so involved from the eligible SI plus **15%** service charges of the cost of such rectification, from the eligible SI and/ or terminate the contract for balance work/ supplies with enforcement of penalty as stated above.

**b)** Defective materials/workmanship will not be accepted under any conditions and shall be rejected outright without compensation. The eligible SI shall be liable for any loss/damage sustained by CREDA due to defective work **with enforcement of penalty as stated above**.

**10) EXTENSION OF THE TIME -**

If the completion of installation is delayed due to any reason beyond the control of the eligible SI, the eligible SI shall without delay give notice to the CREDA in writing of his claim for an extension of time. CREDA on receipt of such notice may or may not agree to extend the contract/delivery date of the system as may be reasonable but without prejudice to other terms and conditions of the contract.

**11) PENALTY FOR DELAY IN COMPLETION OF CONTRACT -**

If the eligible SI fails to complete the assigned work within the schedule time specified in the sanction order or any extension granted there to, CREDA will recover from the SI as penalty a sum of **One per cent (1%)** of the system price for every delayed system per month. For this purpose, the date of taking over shall be reckoned as the date of completion. The total penalty shall not exceed **5% (Five Per cent)** of the cost.

Review of the progress of installation of Solar Community Irrigation Scheme with its all allied works allocated to SIs shall be done time to time by CREDA and if the progress of installation is found unsatisfactory, the allocation of entire remaining uninstalled Solar Community Irrigation System or their part of can be re-allocated to other SI as per discretion of CREDA.

**12) PENALTY DUE FROM THE ELIGIBLE SI -**

All costs of damages and delays for which the eligible SI is liable to the CREDA will be deducted from any money due to the eligible SI including the security deposit of any project under CREDA.

**13) ELIGIBLE SI'S RESPONSIBILITY -**

Notwithstanding anything mentioned in the specifications of subsequent approval or acceptance of the Solar Community Irrigation Scheme with its all allied works by CREDA, if any, the ultimate responsibility for satisfactory performance of the entrusted work shall rest with the eligible SI. If in any case the eligible SI does not complete the work as per the sanction orders issued to them then CREDA may take over the task & complete the project at the risk and cost of eligible SI.

**14) RESPONSIBILITY TO RECTIFY THE LOSS AND DAMAGE -**

If any loss or damage occurs to the work or any part thereof or materials/ system/equipment's for incorporation therein the period for which the eligible SI is responsible for the cause thereof or from any cause whatsoever, the eligible SI shall at his own cost rectify/replace such loss or damage, so that the permanent work confirms in every respect with the provision of the contract to the satisfaction of the Engineer. The eligible SI shall also be liable for any loss or damage to the work/equipment's occasioned by him in course of any operation carried out to him during performing the contract.

**15) RESPONSIBILITY TOWARDS THE WORKMAN OR OUT SIDERS -**

a. The eligible SI shall have to take insurance coverage from any authorized Insurance Company against Workmen compensation due under Workmen Compensation Act and submit copy of the insurance document before issuance of Sanction order.
b. The eligible SI shall ensure all safety measures during execution and repairs of the work. CREDA, will, in no case be responsible for any accident fatal or non-fatal, caused to any workman or outsider in course of transport or execution or repairs of work.
c. All the expenditure including treatment or compensation will be entirely borne by the eligible SIs. The eligible SI shall also be responsible for any claims of the workers including PF, Gratuity, ESI & other legal obligations.
d. SI shall have to submit JCCs within **60 days** after Installation and Commissioning of Solar Community Irrigation System Systems in District Office of CREDA.

**16)** Contractor shall provide 05 year warranty in installed Solar Community Irrigation Scheme with all allied works from the date of commissioning as per the terms & conditions prescribed in the Tender No.105525/CREDA/RE-VI/SCIP&IGGY/2022 dated: 29.07.2022.

**17) DECLARATION OF CONFLICT OF INTEREST –**

**a.** Any regular employee working or worked on basis of contract or through placement agency cannot work directly or indirectly in any scheme of CREDA. If such a person is found working with any SI or through sublet then, such SI shall be blacklisted for three years.

**b.** The bidder shall not be permitted to Bid for the work if the section of HO CREDA (responsible for implementation of work) in which his near relative is posted. Furthermore, the successful bidder shall not be given work in the district in which his near relative is posted. The bidder shall also intimate the names of his near relatives working in CREDA. Bidder shall also intimate the name of persons who are working with him in any capacity and who are near relatives to any employee in CREDA. Any breach of this condition by SI would render himself liable to be blacklisted for three years and removed from approved list of SIs in CREDA.

**Note:-** By the term near relatives are meant Wife, Husband, Parents and son, Brother, Sister, Brother-in-law, Father-in-law, and Mother-in-law etc.

**c.** Bidder must produce an affidavit (Annexure – IV) stating the names of retired/removed employee of CREDA (if any) in his employment who retired /removed within last two years, if in case there is no such person in his employment, his affidavit should clearly state this fact. This affidavit is mandatory, if it is not produced along with the bid, the bid shall be rejected.

**18)** (a) The contractor shall arrange insurance coverage for the materials & components and Solar Community irrigation & Indira Gaon Ganga Yojana with all allied works at his/beneficiary's custody for the work under execution and successful commissioning and subsequent handover to the beneficiary. The contractor shall take up insurance or such other measures for the manpower so as to cover the claim for damage arising under workmen's compensation Act and other applicable State/ Central laws. CREDA shall not bear any responsibility on this account.

(b) Contractor shall arrange for insurance coverage for Solar Community irrigation & Indira Gaon Ganga Yojana with its all allied works and module during CMC period i.e. for 05 year from the date of installation. Insurance should cover for damage and theft. In case of such incidence, SI must replace the lost/damaged part within 7 days.

**19)** The contractor shall abide by the terms and conditions, rules, guidelines, construction practices, safety precautions etc. stipulated in the tender document including any correspondence between the contractor and the **CREDA** having bearing on execution of work and payments of work to be done under the contract.

**20)** The contractor shall be responsible to follow all the laws including Workmen Compensation Act and all other laws in force & shall be responsible for all the obligations towards labour including EPF, ESI, etc.

**21)** All the taxes deductible at source as per Acts in vogue shall be recovered by **CREDA** and deposited with the appropriate authorities

**22)** Contractor agrees to abide by any decision/instruction passed by the appropriate authority under Anti-profiteering rules notified by the state/central government under GST act.

**23)** Any dispute arising out of the contract shall be subject to the jurisdiction of Hon'ble High Court of Chhattisgarh.

**"Herewith everything and anything contained in Tender document no.105525/CREDA/RE-VI/SCIP&IGGY/2022 dated: 29.07.2022 is part of this agreement which has been dully signed by both bidder and authorised signatory of CREDA".**

In witness whereof the parties present today has hereby entered into agreement.

**Signed & sealed on behalf of the above Named contractor**

Name :
Designation :

**Signed on behalf of CREDA**

Name:
Designation: **Chief Engineer**

**Witness:**

1. Name:-…….....

   Address:-…….....

   .....

   .....

2. Name:-…….....

   Address:-…….....

   .....

   .....

**ANNEXURE-X**

Ref. Bid Document No.:_____.

**DECLARATION FOR USING SAME MAKE OF EQUIPMENTS AS PER THE TEST CERTIFICATE**

From:

M/s_____
_____
_____
_____

**Sub: Declaration for using same make of equipment's as per the test certificate**

*We are agreeing to accept that the same make of solar panels, Pumps & Charge controller for which the test report is to be submitted under this Bid to CREDA, is as per Guidelines and Procedures mentioned in the bid and will be supplied by us. We declare to procure the components mentioned above only from the Vendors registered with CREDA.*

*In case if some different make of solar panels, Pumps & Charge controller will be supplied during the implementation or CMC period, we will submit the test report for that particular make component(s).We also agree that such test reports shall be issued by the National Institute of Solar Energy and any other lab accredited by NABL for testing of SPV system as per MNRE specifications and testing procedure.*

**Name of Authorized Signatory**

**Signature of suppliers**

**(With stamp)**

**ANNEXURE – XI**

# BASE RATES/ SOR OF CREDA FOR SOLAR COMMUNITY IRRIGATION SCHEME & INDIRA GAON GANGA YOJANA

**A Civil Works**

| Code | Description | Unit | Rate Without GST |
|---|---|---|---|
| **1** | **EARTH WORK** | | |
| 1.1 | Excavation for all types and sizes of foundations, trenches and drains or for any other purpose including disposal of excavated stuff upto 1.5 m lift and lead upto 50m (at least 5m away from the excavated area), including dressing and leveling of pits. | | |
| 1.1.1 | In all types of soils. | cum | 165.18 |
| 1.1.2 | In ordinary rocks. | cum | 238.39 |
| 1.1.3 | In hard rocks requiring blasting. | cum | 404.46 |
| 1.1.4 | In hard rocks where blasting in prohibited. | cum | 712.50 |
| 1.2 | Surface dressing of the ground including removing vegetation and making up undulations and in-equalities not exceeding 15 cms in depth/ height including disposal of rubbish upto 1.5 m lift and lead upto 50m (at least 5m away from the dressed area). | sqm | 6.43 |
| 1.3 | Felling trees of the girth (measured at a height of 1 m above ground level) including cutting of trunks and branches removing the roots and stacking of serviceable material after cutting in approved sizes and disposal of unserviceable material. | | - |
| 1.3.1 | Beyond 30 cm girth upto and including 60 cm girth | each | 117.86 |
| 1.3.2 | Beyond 60 cm girth upto and including 120 cm girth | each | 519.64 |
| 1.3.3 | Beyond 120 cm girth upto and including 240 cm girth | each | 2,429.46 |
| 1.3.4 | Above 240 cm girth | each | 4,898.21 |
| 1.4 | Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm measured at a height of 1 m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared. | sqm | 3.30 |
| 1.5 | Clearing grass and removal of the rubbish upto a distance of 50 m outside the periphery of the area cleared. | sqm | 1.70 |
| 1.6 | Extra for every additional lift of 1.5 m or part thereof. | | - |
| 1.6.1 | All types of soils | cum | 23.66 |
| 1.6.2 | Ordinary or hard rocks | cum | 42.41 |
| 1.7 | Extra rate for quantity of work executed in or under water and/ or liquid mud including pumping out water. | cum | 45.54 |
| 1.8 | Extra rate for quantity of work executed in or under foul condition. | cum | 39.29 |
| 1.9 | Extra rate for lead for every 50m lead or part thereof and upto 150 m beyond 50 m free lead and 1.5 m free lift by manual means only. | | - |
| 1.9.1 | For Soils | cum | 29.46 |
| 1.9.2 | For Rocks. | cum | 44.20 |
| 1.10 | Pumping out water caused by springs tidal or river seepage, broken water main or drains and like during Excavation or during Excavation and laying of base concrete (volume to be calculated taking height from water level to bottom of pit and to be measured and paid) . | cum | 130.36 |
| 1.11 | Open timbering in foundation trenches including strutting and shoring complete (measurements to be taken of the face area timbered.) | | - |
| 1.11.1 | Depth not exceeding 1.5 M. | sqm | 158.93 |
| 1.11.2 | Depth exceeding 1.5 M. but not exceeding 3 M. | sqm | 161.61 |

| | | | |
|---|---|---|---|
| 1.11.3 | Depth exceeding 3.0 M. | sqm | 165.18 |
| 1.12 | Open timbering in case of shaft, wells cesspit, manholes and like, including strutting, shoring etc. complete (measurements to be taken of face are timbered) | | - |
| 1.12.1 | Depth not exceeding 1.5 M. | sqm | 132.14 |
| 1.12.2 | Depth exceeding 1.5 M. but not exceeding 3 M. | sqm | 137.50 |
| 1.12.3 | Depth exceeding 3.0 M | sqm | 159.82 |
| 1.13 | Extra for planking and strutting in open timbering if required to be left permanently in position (Face to face area of the timber permanently left to be measured). | sqm | 1,153.57 |
| 1.14 | Close timbering in foundation trenches including strutting, shoring and packing cavities where ever required complete (Measurement to be taken of the face area timbered). | | - |
| 1.14.1 | Depth not exceeding 1.5 M. | sqm | 310.71 |
| 1.14.2 | Depth exceeding 1.5 M. but not exceeding 3 M. | sqm | 314.29 |
| 1.14.3 | Depth exceeding 3.0 M. | sqm | 316.96 |
| 1.15 | Close timbering in case of shaft, walls, cesspit, manholes and like including strutting shoring and packing cavities (wherever required complete measurement to be taken of the face area timbered). | | - |
| 1.15.1 | Depth not exceeding 1.5 M. | sqm | 327.68 |
| 1.15.2 | Depth exceeding 1.5 M. but not exceeding 3 M. | sqm | 350.00 |
| 1.15.3 | Depth exceeding 3.0 M. | sqm | 373.21 |
| 1.16 | Extra for planking, strutting and packing materials for cavities in close timbering if required to be left permanently in position (face area of the timber permanently left, to be measured). | sqm | 2,250.89 |
| 1.17 | Filling from available excavated stuff (Excluding rock) in trenches, plinth, sides of foundation etc. in layers not exceeding 20cm in depth consolidating each deposited layer by ramming and watering with a lead upto 50 M. and lift upto 1.5 M. | cum | 58.04 |
| 1.18 | Providing and filling in plinth with sand/ Crusher dust and hard moorum under floor in layers not exceeding 20cm in depth consolidating each deposited layer by ramming and watering, including dressing etc. complete. | cum | 331.25 |
| 1.19 | Providing filling and compacting local earth (from approved source pit) in layers not exceeding 20cm in depth consolidating each deposited layer by ramming and watering, including dressing etc. complete. | cum | 216.07 |
| 1.20 | Excavating holes upto 0.25 cum including getting out the excavated soil, then returning the soil as required in layers not exceeding 20 cm in depth, including consolidating each deposited layer by ramming, watering etc, disposing of surplus excavated soil; as directed within a lead of 50 m and lift upto 1.5 m. | | - |
| 1.20.1 | All kinds of soil. | each | 39.29 |
| 1.20.2 | Ordinary rock | each | 98.21 |
| 1.20.3 | Hard rock (requiring blasting) | each | 195.54 |
| 1.20.4 | Hard rock (blasting prohibited) | each | 261.61 |
| 1.21 | Deduct for the serviceable excavated stone received from the excavation of hard rock which is the property of contractor. | cum | 181.25 |
| 1.22 | Supplying chlorpyrifos/ Lindane emulsifiable concentrate of 20% in sealed containers including delivery as specified. | litre | 185.71 |
| 1.23 | Diluting chemical emulsion (chlorpyrifos/ lindane) in water as per manufacturers recommendation and injecting for post - constructional ani-termite treatment (excluding cost of chemical emulsion): | | - |

| | | | |
|---|---|---|---|
| 1.23.1 | Along external wall where the apron is not provided using diluted chemical emulsion @ 7.5 litres / sqm of the vertical surface of the substructure to a depth of 300 mm including excavation channel along the wall & rodding etc. complete: | metre | 8.13 |
| 1.23.2 | Along external wall below concrete or masonry apron along the plinth wall using diluted chemical emulsion @ 0.65 litres per hole including drilling 12mmdia holes 300mm apart and plugging the same with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing apron after injecting chemical emulsion. | metre | 13.39 |
| 1.23.3 | Treatment of masonry wall/ soil under existing floors using diluted chemical emulsion @ one litre per hole, including drilling 12 mm diameter holes at the junction of floor and walls along the cracks on the floor at the interval of 300 mm and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand) to match the existing floor : | metre | 9.38 |
| 1.24 | Diluting chemical emulsion (chlorpyrifos/ lindane) in oil or kerosene based solution as per manufacturers recommendation and injecting the diluted chemical emulsion for post - constructional anti-termite treatment of wood work at points of contact @ 0.5 litres per hole by drilling 6 mm dia holes at downward angle of 45 degree at 150 mm centre to centre and sealing the same. | metre | 105.36 |
| 1.25 | Diluting chemical emulsion (chlorpyrifos/ lindane) in water as per manufacturers recommendation and injecting for pre-constructional curative cum preventive anti-termite treatment:(Five year service guarantee bond to be signed by contractor) | | - |
| 1.25.1 | Surface treatment by spreading emulsion under floor, over the plinth area before laying base concrete @ 5 litres / sqm | sqm | 24.55 |
| 1.25.2 | Treatment of inside of plinth masonry wall on using diluted chemical emulsion @ 1.5 litre per hole, including drilling 12 mm diameter holes in plinth wall below plinth protection at the interval of 300 mm and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand). | metre | 16.96 |
| 1.25.3 | Treatment of outer side of plinth masonry wall using diluted chemical emulsion @ 1.5 litre per hole, including drilling 12 mm diameter holes in plinth wall at the junction of floor at the interval of 300 mm and plugging with cement mortar 1 :2 (1 cement : 2 Coarse sand). | metre | 12.05 |
| 1.26 | Carriage by mechanical transport upto 5 km lead: | | - |
| 1.26.1 | Earth | cum | 99.11 |
| 1.26.2 | Sludge | cum | 79.46 |
| 1.26.3 | Dismantled Building debris (Mulba) | cum | 81.70 |
| 1.27 | Extra for mechanical transport for every one km or part thereof beyond first 5 km lead. | | - |
| 1.27.1 | Earth | cum.km | 8.04 |
| 1.27.2 | Sludge | cum.km | 6.43 |
| 1.27.3 | Dismantled Building debris (Mulba) | cum.km | 8.04 |
| **2** | **FORM WORK** | | - |
| 2.1 | Providing and fixing form work including centering, shuttering, strutting, staging, propping bracing etc. complete and including its removal at all levels, for: | | - |
| 2.1.1 | Foundations, footings, bases of columns plinth beam, curtain wall in any shape and size and all type of wall below plinth level. | sqm | 124.11 |
| 2.1.2 | Wall of any thickness including attached pilasters, buttresses etc. in super structure. | sqm | 203.57 |
| 2.1.3 | Window sills, anchor blocks, string course, bends, copings, bed plates and like. | sqm | 164.29 |
| 2.1.4 | Edge of slab, breaks in floor and walls upto 200mm. | metre | 30.36 |

| | | | |
|---|---|---|---|
| 2.1.5 | Columns, Pillars, Piers and likes- rectangular or square in shape | sqm | 265.18 |
| 2.1.6 | Columns, beams & walls- circular or any other geometrical shape other than square and rectangular in all sizes | sqm | 317.86 |
| 2.1.7 | Suspended floors, roofs, access platform, balconies (plain surfaces) and shelves (cast in situ) | sqm | 209.82 |
| 2.1.8 | Beams, lintels, cantilevers & walls | sqm | 180.36 |
| 2.1.9 | Vertical and horizontal fins individually or forming box, louvers bands, almirah shelves and likes. | sqm | 300.00 |
| 2.1.10 | Folded plates slabs | sqm | 173.21 |
| 2.1.11 | Arches, domes and likes, upto 6 M. Span. | sqm | 521.43 |
| 2.1.12 | Arches, domes and likes, exceeding 6 M. span | sqm | 794.64 |
| 2.1.13 | Weather shade, chhajja, Cornices and mouldings | sqm | 262.50 |
| 2.1.14 | Spiral / folded plate type stair cases including risers and landings | sqm | 274.11 |
| 2.1.15 | Stair cases of all types excluding spiral and folded plate type, including risers and landings | sqm | 205.36 |
| 2.1.16 | Coffer/ waffle/ Grid slab of any size or shape.<br><br>Note: (1) Any grid box of area less than 1 sqm will only be paid in this item. (2) Only plan area is to be measured and paid and grid beams or fins will not be paid separately. | sqm | 455.36 |
| 2.2 | Extra for additional height every 1m or part thereof where height of staging for form work exceeds 4.0 metre with adequate bracing, propping etc at all levels, for suspended floor, roof, landing, beam and balcony. (only plan area is to be measured): | sqm | 36.16 |
| 2.3 | Extra for providing fixing and removing of propping from lower floor upwards for the concreting. Propping should be provided two floors below. The props of lower floor must be 50% of the props of the floor above including wedging etc. complete. In case propping is done in one floor below, only half the rate shall be paid. | sqm | 15.18 |
| 2.4 | Extra for unsupported individual columns with height more than 4.0 m from the immediate lower level in every floor.<br><br>(full area of column is to be paid) | sqm | 26.34 |
| **3** | **CEMENT CONCRETE (PLAIN AND REINFORCED)** | | - |
| 3.1 | Providing and laying nominal mix plain cement concrete with crushed stone aggregate using concrete mixer in all works upto plinth level excluding cost of form work. | | - |
| 3.1.1 | 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40mm nominal size). | cum | 2,150.89 |
| 3.1.2 | 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate 40mm nominal size). | cum | 2,374.11 |
| 3.1.3 | 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40mm nominal size). | cum | 2,651.79 |
| 3.1.4 | 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 40mm nominal size). | cum | 3,171.43 |
| 3.1.5 | 1:1½:3 (1 cement : 1½ coarse sand : 3 graded stone aggregate 20mm nominal size). | cum | 3,636.61 |
| 3.2 | Providing and laying nominal mix reinforced cement concrete with crushed stone aggregate using concrete mixer in all works upto plinth level excluding cost of form work.<br><br>(Note :Excess/ less cement used as per design mix is payable/ recoverable separately) | | - |
| 3.2.1 | 1:1½:3 (1 cement : 1½ coarse sand : 3 graded stone aggregate 20mm nominal size). | cum | 3,716.96 |
| 3.3 | Providing and laying design mix reinforced cement concrete with crushed graded stone aggregate 20mm nominal size using batching plant, transit mixer and concrete pump, in all works upto plinth level excluding cost of form work. | | - |

| | | | |
|---|---|---|---|
| 3.3.1 | M-20 Grade | cum | 3,777.68 |
| 3.3.2 | M-25 Grade | cum | 3,837.50 |
| 3.3.3 | M-30 Grade | cum | 3,894.64 |
| 3.3.4 | M-35 Grade | cum | 3,951.79 |
| 3.3.5 | M-40 Grade | cum | 4,008.93 |
| 3.4 | Extra for laying PCC/RCC of any grade in superstructure above plinth level for every floor or part thereof in addition to rate for foundation and plinth: | cum | 87.05 |
| 3.5 | Providing and laying pre-stressed cement concrete of M-35 grade in superstructure including form work but excluding reinforcement complete as per drawing and specifications and IS : 1343-2012. | cum | 5,647.32 |
| 3.6 | Providing and laying High tensile steel wires/ strands at any level including all accessories i.e. sheathing duct, tube anchorage set, and stressing, stressing operations and grouting with cement complete as per drawing and technical specifications. | kg | 129.46 |
| 3.7 | Providing and mixing in cement concrete, triangular polyester fiber Recron 3s (Anti-shrinkage Admixture) of 12 mm length of approved make like Reliance industries Ltd etc. in proportion as recommended by manufacturer. | kg | 326.79 |
| 3.8 | Extra for providing and fixing expanded metal mesh of size 20mm x60mm and strands 3.0mm wide, 1.6 mm thick, weighting 2.64 kg. per sqm for encasing of rolled steel section in beams, columns and grillages but excluding cost of hangers. | sqm | 341.96 |
| 3.9 | Extra for precast PCC/ RCC work of any mix including form work, hoisting and fixing in Cement Mortar. 1:2 (1 Cement : 2 coarse sand) and finishing with cement plaster in Cement Mortar 1:3 (1 Cement : 3 coarse sand) but excluding reinforcement. | cum | 418.75 |
| 3.10 | Extra for laying PCC/ RCC, in or under water or liquid mud including cost of pumping or bailing out of water and removing slush etc. complete: | cum | 233.04 |
| 3.11 | Extra for laying PCC/ RCC, in or under foul conditions. | cum | 86.61 |
| 3.12 | Providing and placing in position reinforcement for R.C.C. work including straightening, cutting, bending, binding etc. complete as per drawings including cost of binding wire in foundation and plinth all complete: | | - |
| 3.12.1 | Thermo-Mechanically treated bars FE 415 | kg | 48.66 |
| 3.12.2 | Thermo-Mechanically treated bars FE 500D | kg | 48.66 |
| 3.12.3 | Thermo-Mechanically treated bars FE 550D | kg | 49.11 |
| 3.12.4 | Cold twisted bar / Hot rolled deformed steel | kg | 47.77 |
| 3.13 | Providing and laying damp proof course (upto 50mm thick) with plain cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded crushed stone aggregate 20mm nominal size) including form work. | cum | 3,783.04 |
| 3.14 | Providing and mixing water proofing material in PCC/ RCC work in the proportion recommended by the manufacturer. | kg | 38.84 |
| 3.15 | Applying a coat of hot bitumen VG-10 using @ 1.7kg/ sqm on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil. | sqm | 83.48 |
| 3.16 | Making 50mm thick plinth protection of plain cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded crushed stone aggregate 20mm nominal size) over 75mm bed of dry brick ballast 40mm nominal size well rammed and consolidated and grouted with sand including finishing the top smooth. | sqm | 243.75 |
| 3.17 | Providing and laying 25mm thick eves board/ facia made with cement mortar 1:3 (1 cement: 3 coarse sand) and chicken mesh including cost of form work required but excluding steel reinforcement. | sqm | 684.82 |
| 3.18 | Providing and filling in position, blown bitumen in expansion joints per cm. depth and per cm width. | metre | 4.55 |
| 3.19 | Providing and fixing in position copper plate as per design for expansion joints. | kg | 599.11 |

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| 3.20 | Providing and fixing aluminium strip 1.60 mm thick on expansion joints with iron screws as per design to match the colour, shade of wall treatment . | sqm | 1,247.32 |
| 3.21 | Providing and fixing in position impregnated fibre board confirming to IS: 1838 in expansion joints, including cost of primer, sealing compound all complete. | | - |
| 3.21.1 | 12 mm thick | sqm | 438.39 |
| 3.21.2 | 25mm thick | sqm | 685.71 |
| 3.22 | Providing and fixing 6 mm thick asbestos sheet covering over expansion joints with iron screws as per design to match the colour/shade of wall treatment. | sqm | 476.79 |
| 3.23 | Providing and fixing in expansion joint pre moulded cross linked polymer based filler as per IS:1838 (part III) of approved make including cutting to required size and shape etc complete. | | - |
| 3.23.1 | 12 mm thick | sqm | 526.79 |
| 3.23.2 | 25 mm thick | sqm | 991.07 |
| 3.23.3 | 50 mm thick | sqm | 1,970.54 |
| 3.24 | Providing and applying for hermetically water proof sealing of vertical / horizontal expansion joint with approved make Poly Sulphide Sealant compound (two component elastomeric sealant) having 80% tensile modulus elongation, proper bonding with building surface complete with cleaning and preparing of building surface, applying polymer solvent primer, providing and fixing PU back up rod of suitable dia in expansion joint for core making, filling with Poly Sulphide Sealant (Sealant filling depth should be minimum half of the joint gap), finishing and smoothing the surface etc complete.<br>The application shall be got done through the authorised applicator of the manufacture of compound | | - |
| 3.24.1 | For gap upto 25 mm wide | metre | 464.29 |
| 3.24.2 | For gap 40 mm wide | metre | 858.93 |
| 3.24.3 | For gap 50 mm wide | metre | 1,247.32 |
| **4** | **WATER PROOFING** | | - |
| 4.1 | Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for underground structures using rough Kota stone and consisting of:<br>i) 1st layer of 22mm to 25mm thick approved rough Kota stone slab over a 25mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound conforming to IS:2645 over the leveling course (leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound.<br>ii) 2nd layer of 25mm thick cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound.<br>iii) Finishing top with stone aggregate of 10mm to 12mm nominal size spreading @ 8 cudm/sqm thoroughly embedded in the 2nd layer. | sqm | 600.00 |
| 4.2 | Providing and laying integral cement based treatment for water proofing on the vertical surface at all levels by fixing 22 mm to 25mm thick rough Kota stone slab with cement slurry mixed with water proofing compound conforming to IS:2645 with a gap of 20mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with 20mm thick cement mortar 1:3 (1 cement : 3 coarse sand) with neat cement punning mixed with water proofing compound complete. | sqm | 641.96 |

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| 4.3 | Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of WC, kitchen and the like consisting of:<br>i) 1st course of applying cement slurry @ 4.4 Kg/sqm mixed with water proofing compound conforming to IS 2645 including rounding off junction of vertical and horizontal surface.<br>ii) 2nd course of 20mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound including rounding off junction of vertical and horizontal surface.<br>iii) 3rd course of applying blown or residual bitumen applied hot @ 1.7 Kg. per sqm of area.<br>iv) 4th course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 Kg. per sqm of area. | sqm | 397.32 |
| 4.4 | Providing and placing in position suitable PVC water stops conforming to IS:12200 for construction/ expansion joints between two RCC members and fixed to the reinforcement with binding wire before pouring concrete etc. complete : | | - |
| 4.4.1 | Serrated with central bulb (225mm wide, 8-11mm thick). | metre | 406.25 |
| 4.4.2 | Dumb bell with central bulb (180mm wide, 8mm thick). | metre | 366.07 |
| 4.4.3 | Kickers (320mm wide, 5mm thick). | metre | 375.89 |
| 4.5 | Providing and laying water proofing treatment in sunken portion of WCs, bathroom, kitchen etc., by applying cement slurry mixed with water proofing cement compound consisting of following applications including surface preparation:<br>i) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm. This layer will be allowed to air cure for 4 hours.<br>ii) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound@ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours.<br>The rate includes treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry. | sqm | 162.50 |
| 4.6 | Providing and laying water proofing treatment on roofs of slabs by applying cement slurry mixed with water proofing cement compound consisting of following applications including surface preparation:<br>i) 1st layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/sqm.<br>ii) 2nd layer of Fibre glass cloth when the first layer is still green. Overlaps of joints of fibre cloth should not be less than 10 cm.<br>iii) 3rdlayer of 1.5 mm thickness consisting of slurry of cement @ 1.289 kg/sqm mixed with coarse sand @ 1.289 kg/sqm and water proofing cement compound @ 0.07 kg/sqm. This will be allowed to air cure for 4 hours followed by water curing for 48 hours. The entire treatment will be taken upto 30cm on parapet wall and tucked into groove in parapet all around.<br>iv) 4th and final layer of brick tiling with cement mortar (which will be paid for separately)<br>For the purpose of measurement the entire treated surface will be measured. | sqm | 252.68 |

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| 4.7 | Providing and laying integral cement based water proofing treatment on roofs, balconies, terraces etc with average thickness of 120mm and minimum thickness at khurra as 65 mm, consisting of following operations including surface preparation:<br><br>i) Applying a slurry coat of neat cement using 2.75 kg/sqm. of cement mixed with water proofing compound conforming to IS. 2645 over the RCC slab including adjoining walls upto 300mm height.<br><br>ii) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) mixed with water proofing compound conforming to IS : 2645 over 20 mm thick layer of cement mortar of mix 1:5 (1 cement :5 coarse sand ) mixed with water proofing compound conforming to IS : 2645 to required slope and treating similarly the adjoining walls upto 300 mm height including rounding of junctions of walls and slabs.<br><br>iii) After two days of proper curing applying a second coat of cement slurry using 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645.<br><br>iv) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement :4 coarse sand) mixed with water proofing compound conforming to IS : 2645 including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep.<br><br>v) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test.<br><br>All above operations to be done in order: | sqm | 545.54 |
| 4.8 | Providing and laying six course damp proof treatment in basement, sump, reservoir etc. consisting of first, third, fifth course of blown type petroleum bitumen of IS grade 85/25 hot @ 1.6kg/ sqm and 2nd & 4th course of self finished bitumen tar felt with priming coat with bitumen solution applied at the rate of 0.25 litre per sqm and sixth and final course of stone grit 6mm and down pea sized gravel spreaded at 0.008 cum per sqm including preparation of surface by grouting cracks, providing C.C. fillets, rounding of corners and cleaning and drying of the surface before priming coat is applied complete. | | - |
| 4.8.1 | With bitumen felt of type 2, grade 2 (Fibre base) in 2nd and 4th course. | sqm | 358.93 |
| 4.8.2 | With bitumen felt of type 3, grade 2 (Hessian base) in 2nd and 4th course. | sqm | 348.21 |
| 4.8.3 | With bitumen felt of type 2, grade 2 (Fibre base) in 2nd course and & type 3, grade 2 (Hessian base) in 4th course. | sqm | 353.57 |
| 4.9 | Providing and laying eight course damp proofing treatment in basement, sumps, reservoirs etc. consisting of first, third, fifth and seventh course of blown type petroleum bitumen of IS grade 85/ 25 applied hot at the rate of 1.60kg/ sqm. and 2nd 4th, 6th course of self finished bitumen tar felt with priming coat with bitumen solution applied at the rate of a minimum 0.25 litre per sqm eight and final course of stone grit 6mm and down pea sized gravel spreaded at 0.008 cum per sqm including preparation of surface by grouting cracks, providing C.C. fillets, rounding of corners and cleaning and drying of the surface before priming coat is applied complete. | | - |
| 4.9.1 | With bitumen felt of type 2, grade 2 (Fibre base) in 2nd, 4th & 6th course. | sqm | 503.57 |
| 4.9.2 | With bitumen felt of type 3, grade 2 (Hessian base) three courses. | sqm | 486.61 |
| 4.9.3 | With bitumen felt of type 2 grade 2 (Fibre base) in two courses, one course with type 3 grade 2 (Hessian base). | sqm | 498.21 |
| 4.9.4 | With bitumen felt of type 2, grade 2 (Fibre base) one course and two courses with type 3 grade 2 (Hessian base). | sqm | 492.86 |

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| 4.10 | Providing and laying three course damp proofing treatment in water reservoir, sump, tank etc., with bitumen felt and blown type petroleum bitumen at the rate of 1.6 Kg/sqm 1st, 3rd course and 2nd course with tar felt including applying priming coat at the rate of 0.25 litre per sqm and fillets and rounding corners, wherever required, complete. | | - |
| 4.10.1 | Bitumen felt of type 2 grade 2 (Fibre base) | sqm | 286.61 |
| 4.10.2 | With tar felt (Hessian base) type 3 grade 2. | sqm | 275.89 |
| 4.11 | Supplying and applying bituminous solution primer on roof and or wall surface at 0.24 litre per sqm. | sqm | 18.30 |
| 4.12 | Deduct for omitting in water proofing treatment final course of spreading stone grit 6mm down size or pea sized gravel : | | - |
| 4.12.1 | At 6 cudm per sqm. | sqm | 10.27 |
| 4.12.2 | At 8 cudm per sqm. | sqm | 12.05 |
| 4.13 | Grading roof for water proofing treatment with: | | - |
| 4.13.1 | Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) | cum | 3,408.04 |
| 4.13.2 | Cement mortar 1:3 (1 cement : 3 coarse sand) | cum | 4,117.86 |
| 4.13.3 | Cement mortar 1:4 (1cement : 4 coarse sand) | cum | 3,393.75 |
| 4.14 | Providing and fixing 2mm thick (for corrugated roof sheets) APP (Atactic Polypropylene Polymer) modified prefabricated five layer 2mm thick water proofing membrane, black finished reinforced with glass fibre matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 ltr/sq. mtr. by the same membrane manufacture of density at 25°C, 0.87 - 0.89 kg/ ltr and viscosity 70 - 160 cps. Over the primer coat the layer of membrane shall be laid using Butane torch and sealing all joints etc., and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be: Joint strength in longitudinal and transverse direction at 23°C as 350/300 N/ 5cm. Tear strength in longitudinal and transverse direction as 60/80N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D - 5147. The laying of membrane shall be got done through the authorised applicator of the manufacture of membrane. | sqm | 240.18 |
| 4.15 | Providing and laying 3mm thick APP (Atactic Polypropylene Polymer) modified prefabricated five layer, 3mm thick water proofing membrane, black finished reinforced with glass fibre matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 ltr/sqm. by the same membrane manufactured of density at 25°C, 0.87 - 0.89 kg/ltr and viscosity 70 - 160 cps. over the primer coat the layer of membrane shall be laid using Butane torch and sealing all joints etc., and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be : Joint strength in longitudinal and transverse direction at 23°C as 350/300 N/5cm. Tear strength in longitudinal and transverse direction as 60/80N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D - 5147. | sqm | 319.64 |
| 4.16 | Providing and laying 3mm thick APP (Atactic Polypropylene Polymer) modified prefabricated five layer 3mm thick water proofing membrane, black finished reinforced with non-woven polyester matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 ltr/sqm. by the same membrane manufacture of density at 25°C, 0.87-0.89 kg/ltr and viscosity 70-160 cps. Over the primer coat the layer of membrane shall be laid using Butane Torch and sealing all joints etc., and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under :Joint strength in longitudinal and transverse direction at 23°C as 650/450N/5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D - 5147. | sqm | 353.57 |

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| 4.17 | Extra for covering top of membrane with Geotextile, 120gsm non woven, 100% polyester of thickness 1 to 1.25mm bonded to the membrane with intermittent touch by heating the membrane by Butane Torch as per manufactures recommendation. | sqm | 45.98 |
| 4.18 | Providing and fixing broken glazed tiles on top of hot bitumen @ 1.00 kg/ sqm (0.80 kg-85/25 grade and 0.20 kg -80/100 grade) and joint filled with cement mortar 1:2 (1 cement :2 marble dust) mixed with water proofing compound complete. | sqm | 119.64 |
| 4.19 | Providing water proofing treatment against dampness & Seepage on RCC or lime concrete roof/ terrace, over head tank, sunken slab consisting of following operations:<br>i) Removing loose material and 25 mm cement concrete/ cement plaster including gola etc. and cleaning the surface.<br>ii) Drilling 20mm dia holes spacing not more than 300 mm center to center in cracks and joint of wall & slab.<br>iii) Injecting polymer based high strength water proofing compound of approved brand & make, admixed with cement in the ratio as specified by manufacturer, in holes by pressure pump.<br>iv) Leveling the surface by providing and laying 25mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5/6mm) mixed with polymer based high strength water proofing compound of approved brand & make in the ratio as specified by manufacturer.<br>v) Providing and laying of bonding slurry prepared by mixing of cement with approved make and brand acrylic polymer (as per IS 13435 Part-3) in two layers (totaling up-to 3mm thick) by brush. Second layer to be laid after 4 hours of first layer.<br>vi) Providing and laying 15mm thick cement plaster in cement mortar 1:4 (1 cement : 4 coarse sand) and finishing the surface with neat cement admixed with integral water proofing compound (IS: 2645) as per manufacturers recommendations. This operation shall be continued upto 300 height on parapet wall.<br>vii) After a short period of above operation a string marking shall be done making squares of 300x300mm. | sqm | 656.25 |
| 4.20 | Providing post water proofing treatment against dampness & Seepage in walls of basement, plinth, super structure (horizontal or vertical) consisting of following operations:<br>i) Removing loose material and cleaning the surface.<br>ii) Drilling 20mm dia holes in walls/ floor in zigzag manner spacing not more than 150 mm center to center.<br>iii) Injecting polymer based high strength water proofing compound of approved brand & make, admixed with cement in the ratio as specified by manufacturer, in holes by pressure pump.<br>iv) Plugging holes with polymer compound admixed with cement.<br>v) Providing and laying of bonding slurry prepared by mixing of cement with approved make and brand acrylic polymer (as per IS 13435 Part-3) in two layers (totaling up-to 3mm thick) by brush. Second layer to be laid after 4 hours of first layer.<br>vi) Providing and laying 15mm thick cement plaster in cement mortar 1:4 (1 cement : 4 coarse sand) and finishing the surface with neat cement admixed with integral water proofing compound (IS: 2645) as per manufacturers recommendations. | sqm | 617.86 |
| 4.21 | Providing post water proofing treatment against dampness & Seepage in roof, terraces, sunken floor of toilets with reinforced acrylic breathable (polymer content 35%, elongation at break at > 100%) coating consisting of following operations:<br>i) Removing loose material and cleaning the surface.<br>ii) Priming in one coat with water based acrylic emulsion.<br>iii) Three coats with reinforced acrylic breathable polymer. | sqm | 545.54 |

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| 4.22 | Providing Water proofing treatment over Roof, Wall, Chhajjas, Balcony with Diamond Shield and Sealer coat or equivalent at leakage/ seepage area consisting of the operation:<br><br>(i) Surface preparation roughening of surface, opening of cracks in 'V' groove in size of 5mm x 10m (WxD), filling of cracks with putty of Diamond shield with laying fiber glass mesh, Cleaning of surface by scrubbing with steel wire/ Nylon brush. Removing all dust particles and washing with adequate water to clean completely.<br><br>(ii) Providing and applying 1st coat of diamond shield or equivalent compound (having two component dry powder 80% Chemical 20% (chemical having 30% solid contents) making flexible waterproof and protective modified mortar with minimum thickness 70-80 micron after proper mixing of both the parts of compound along with laying of fiber glass mesh (of weaving size of 10x10 yarn/inch duly coated with alkaline resistant polymer). Allow the coating to set in natural air for minimum 2 Hrs. After 1st coat apply 2nd coat with minimum thickness 100 micron of the same compound. Allow the 2nd coat to set in natural air for minimum 4 Hrs. Total consumption of the diamond shield or equivalent in both coat should be @ 17.90 kg for 10sqm area.<br>(iii) Over the above layers providing and applying 1st coat of sealer compound (Single component High Build elastomeric, flexible, pure acrylic waterproofing membranes having solid content of 65%) minimum 50-60 micron and allow it to set in natural air for minimum 2 Hrs. After 1st coat apply 2nd and final coat 120-140 micron of sealer compound and allow it to set in natural air for minimum 4 Hrs. Consumption of Sealer compound should be @ 5.40 kg per 10 sqm area. The final area appearance of the coating will be milky white<br>(iv) The treated area should be cure with water for 48 hrs by flooding the surface. All above operations to be done in order.<br>The application shall be got done through the authorised applicator of the manufacturer. | sqm | 375.89 |
| **5** | **MORTARS** | | - |
| 5.1 | Cement Mortar 1:1 (1 cement : 1 fine sand) | cum | 5,341.07 |
| 5.2 | Cement mortar 1:2 (1 cement : 2 fine sand). | cum | 3,777.68 |
| 5.3 | Cement mortar 1:3 (1 cement : 3 fine sand). | cum | 2,996.43 |
| 5.4 | Cement mortar 1:4 (1 cement : 4 fine sand). | cum | 2,369.64 |
| 5.5 | Cement mortar 1:5 (1 cement : 5 fine sand). | cum | 2,032.14 |
| 5.6 | Cement mortar 1:6 (1 cement : 6 fine sand). | cum | 1,742.86 |
| 5.7 | Cement mortar 1:2 (1 cement : 2 coarse sand). | cum | 3,777.68 |
| 5.8 | Cement mortar 1:3 (1 cement : 3 coarse sand). | cum | 2,996.43 |
| 5.9 | Cement mortar 1:4 (1 cement : 4 coarse sand). | cum | 2,369.64 |
| 5.10 | Cement mortar 1:5 (1 cement : 5 coarse sand). | cum | 2,032.14 |
| 5.11 | Cement mortar 1:6 (1 cement : 6 coarse sand). | cum | 1,742.86 |
| 5.12 | Cement mortar 1:8 (1 cement : 8 Coarse sand). | cum | 1,453.57 |
| 5.13 | Cement mortar 1:2 (1 cement : 2 stone dust). | cum | 3,777.68 |
| 5.14 | Cement mortar 1:2 (1 cement : 2 marble dust). | cum | 4,490.18 |
| 5.15 | White cement mortar 1:5 (1 white cement : 5 marble dust). | cum | 2,834.82 |
| 5.16 | White cement mortar 1: 2 (1 white cement : 2 marble dust). | cum | 9,711.61 |
| 5.17 | White cement mortar 1:3 (1 white cement : 3 marble dust). | cum | 7,715.18 |
| 5.18 | White cement mortar 1:5 (1 white cement : 5 marble dust) | cum | 5,215.18 |
| 5.19 | Cement mortar 1:1:3 (1 cement : 1 marble dust : 3 stone dust) | cum | 4,819.64 |
| 5.20 | Mud mortar | cum | 217.86 |
| 5.21 | Cement Concrete 1: 6 : 12 (1 cement : 6 coarse sand : 12 crushed stone aggregate 12.5mm) | cum | 2,167.86 |
| **6** | **STONE WORK** | | - |

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| 6.1 | Random rubble masonry with hard stone in foundation and plinth in Cement Mortar 1:6 (1 Cement : 6 Coarse Sand) including leveling up with cement concrete 1:6:12 (1 cement : 6 coarse sand: 12 stone aggregate 20mm nominal size) upto plinth level. | cum | 2,245.54 |
| 6.2 | Extra for random rubble masonry with hard stone in superstructure above plinth level for every floor or part thereof in addition to rate for foundation and plinth: | cum | 181.25 |
| 6.3 | Extra for random rubble masonry with hard stone in square or rectangular pillars. | cum | 170.54 |
| 6.4 | Extra for random rubble masonry with hard stone in circular pillars. | cum | 581.25 |
| 6.5 | Extra for random rubble masonry with hard stone curved on plan for a mean radius not exceeding 6.00m. | cum | 256.25 |
| 6.6 | Coursed rubble masonry (Second sort) with hard stone in Cement mortar 1:6 (1 cement : 6 coarse sand) upto plinth level. | cum | 2,320.54 |
| 6.7 | Extra for Coursed rubble masonry with hard stone (Second Sort) in superstructure above plinth level for every floor or part thereof in addition to rate for foundation and plinth: | cum | 235.71 |
| 6.8 | Extra for coursed rubble masonry with hard stone (Second Sort) in square or rectangular pillars. | cum | 189.29 |
| 6.9 | Extra for coursed rubble masonry with hard stone (Second sort) in circular pillars. | cum | 655.36 |
| 6.10 | Extra for coursed rubble masonry with hard stone (Second Sort) curved on plan for a mean radius not exceeding 6.0m | cum | 256.25 |
| 6.11 | Extra for laying stone work, in or under water and or liquid, mud including cost of pumping/ bailing out water and removing slush etc. complete. | cum | 325.89 |
| 6.12 | Extra for laying stone work, in or under foul conditions. | cum | 86.61 |
| **7** | **BRICK WORK** | | - |
| 7.1 | Brick work with modular well burnt clay bricks of crushing strength not less than 35 kg/sqcm and water absorption not more than 20% in foundation and plinth in: | | - |
| 7.1.1 | Cement Mortar 1:3 (1 Cement : 3 Coarse Sand) | cum | 3,749.11 |
| 7.1.2 | Cement Mortar 1:4 (1 Cement : 4 Coarse Sand) | cum | 3,580.36 |
| 7.1.3 | Cement Mortar 1:5 (1 Cement : 5 Coarse Sand) | cum | 3,489.29 |
| 7.1.4 | Cement Mortar 1:6 (1 Cement : 6 Coarse Sand) | cum | 3,411.61 |
| 7.2 | Brick work with modular well burnt clay bricks of crushing strength not less than 25 kg/sqcm and water absorption not more than 20% in foundation and plinth in: | | - |
| 7.2.1 | Cement Mortar 1:5 (1 Cement : 5 Coarse Sand) | cum | 3,323.21 |
| 7.2.2 | Cement Mortar 1:6 (1 Cement : 6 Coarse Sand) | cum | 3,245.54 |
| 7.2.3 | Cement Mortar 1:8 (1 Cement : 8 Coarse Sand) | cum | 3,167.86 |
| 7.3 | Brick work with non-modular well burnt (open bhatta) clay bricks of crushing strength not less than 20 kg/sqcm and water absorption not more than 25% in foundation and plinth in: | | - |
| 7.3.1 | Cement Mortar 1:6 (1 Cement : 6 Coarse Sand) | cum | 2,750.00 |
| 7.3.2 | Cement Mortar 1:8 (1 Cement : 8 Coarse Sand) | cum | 2,668.75 |
| 7.4 | Brick work with modular well burnt (open bhatta) clay bricks of crushing strength not less than 20 kg/sqcm and water absorption not more than 25% in foundation and plinth in: | | - |
| 7.4.1 | Cement Mortar 1:6 (1 Cement : 6 Coarse Sand) | cum | 2,913.39 |
| 7.4.2 | Cement Mortar 1:8 (1 Cement : 8 Coarse Sand) | cum | 2,835.71 |
| 7.5 | Brick work with modular fly-ash lime bricks (FaLG Bricks) confirming to IS:12894-2002 of class designation 4.0 in foundation and plinth in: | | - |
| 7.5.1 | Cement Mortar 1:3 (1 cement : 3 coarse sand) | cum | 3,250.89 |
| 7.5.2 | Cement Mortar 1:4 (1 cement : 4 coarse sand) | cum | 3,082.14 |

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| 7.5.3 | Cement Mortar 1:5 (1 cement : 5 coarse sand) | cum | 3,099.11 |
| 7.5.4 | Cement Mortar 1:6 (1 cement : 6 coarse sand) | cum | 2,913.39 |
| 7.5.5 | Cement Mortar 1:8 (1 cement : 8 coarse sand) | cum | 2,818.75 |
| 7.6 | Extra for brick work in superstructure above plinth level for every floor or part thereof in addition to rate for foundation and plinth: | cum | 108.04 |
| 7.7 | Extra for brick work in square and rectangular pillars. (size not more than 600mm in any direction) | cum | 165.18 |
| 7.8 | Extra for brick work curved on plan upto mean radius not exceeding 6 m including form work. | cum | 348.21 |
| 7.9 | Half brick thick (9cm) brick masonry with modular well burnt clay bricks of crushing strength not less than 35 kg/sqcm and water absorption not more than 20% upto plinth level: | | - |
| 7.9.1 | Cement Mortar 1:3 (1 cement : 3 coarse sand) | sqm | 400.00 |
| 7.9.2 | Cement Mortar 1:4 (1 cement : 4 coarse sand) | sqm | 388.39 |
| 7.10 | Half brick thick brick masonry with modular well-burnt clay bricks of crushing strength not less than 25 kg/sqcm and water absorption not more than 20% upto plinth level: | | - |
| 7.10.1 | Cement Mortar 1:3 (1 cement : 3 coarse sand) | sqm | 383.93 |
| 7.10.2 | Cement Mortar 1:4 (1 cement : 4 coarse sand) | sqm | 372.32 |
| 7.11 | Half brick thick brick masonry with fly-ash lime bricks (FaLG Bricks) confirming to IS:12894-2002 of class designation 4.0 in superstructure above plinth level upto plinth level: | | - |
| 7.11.1 | Cement Mortar 1:3 (1 cement : 3 coarse sand) | sqm | 351.79 |
| 7.11.2 | Cement Mortar 1:4 (1 cement : 4 coarse sand) | sqm | 341.07 |
| 7.12 | Extra for half brick work in superstructure above plinth level for every story or part thereof in addition to rate for upto plinth level: | sqm | 9.82 |
| 7.13 | Half brick thick honey comb brick work with modular well burnt clay bricks of crushing strength not less than 35 kg/sqcm and water absorption not more than 20% upto plinth level. | | - |
| 7.13.1 | Cement Mortar 1:3 (1 cement : 3 coarse sand) | sqm | 300.89 |
| 7.13.2 | Cement Mortar 1:4 (1 cement : 4 coarse sand) | sqm | 293.75 |
| 7.14 | Half brick thick honey comb brick work with modular well burnt clay bricks of crushing strength not less than 25 kg/sqcm and water absorption not more than 20% upto plinth level. | | - |
| 7.14.1 | Cement Mortar 1:3 (1 cement : 3 coarse sand) | sqm | 290.18 |
| 7.14.2 | Cement Mortar 1:4 (1 cement : 4 coarse sand) | sqm | 283.04 |
| 7.15 | Half brick thick honey comb brick work with fly-ash lime bricks (FaLG Bricks) confirming to IS:12894-2002 of class designation 4.0 upto plinth level. | | - |
| 7.15.1 | Cement Mortar 1:3 (1 cement : 3 coarse sand) | sqm | 268.75 |
| 7.15.2 | Cement Mortar 1:4 (1 cement : 4 coarse sand) | sqm | 261.61 |
| 7.16 | Extra for half brick thick honey comb brick work in superstructure above plinth level for every story or part thereof in addition to rate for upto plinth level: | sqm | 10.71 |
| 7.17 | Extra for cutting or chamfering of bricks to required shape in brick masonry work | metre | 12.95 |
| 7.18 | Providing 10cm. x 7.60 cm. drip course with specially moulded burnt bricks of crushing strength not less than 35 kg/sqcm and water absorption not more than 20% at junction of roof and walls in cement mortar 1:4 (1 cement 4 fine sand) | metre | 61.61 |
| 7.19 | Moulding and cornices with brick masonry using bricks of crushing strength not less than 35 kg/sqcm and water absorption not more than 20% in cement Mortar 1:4 (1 cement 4 coarse sand) including cement plaster 15 mm thick, 10 cm projected, 20 cm deep (40 cm Girth) in cement mortar 1:4 (1 cement : 4 fine sand) at any floor. | metre | 225.00 |

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| 7.20 | Extra for providing and placing in position hopping 25x1.60 mm or 2 Nos 6mm dia MS bars reinforcement at every third course of half brick masonry. | sqm | 55.80 |
| 7.21 | Extra for laying brick work in/under water and/or liquid mud including cost of pumping or bailing out water and removing slush etc. complete. | cum | 130.36 |
| 7.22 | Extra for laying brick work in or under foul conditions. | cum | 86.61 |
| 7.23 | Extra for brick work, where height of work exceeds 4.0 metre from immediate below floor level. | cum | 84.38 |
| 7.24 | Precast cement concrete block masonry work with precast blocks having crushing strength 75 kg/sqcm in cement mortar 1:6(1 Cement :6 coarse sand ) .(To be used in boundary wall and plaster shall not be done.) | cum | 4,178.57 |
| 7.25 | Providing and laying AAC Autoclaved aerated concrete block confirming to IS: 2185 (Part-3)-1984) in block masonry with AAC blocks of width 100/ 200mm height 200/250/300mm, length 400/500/600 mm (approved sizes) with cement mortar 1 :6 (1 Cement :6 coarse sand) in superstructure. AAC blocks should have specific gravity 0.6 to 0.65 and crushing strength should not be less than 3 N/ sqmm (testing as per IS: 6441 - 1972). | cum | 4,054.46 |
| **8** | **WOOD AND PVC WORK** | | - |
| 8.1 | Providing wood work in frames of doors, windows, clerestory windows and other frames wrought framed and fixed in position. | | - |
| 8.1.1 | Teak wood | cum | 1,02,462.50 |
| 8.1.2 | Sal, bijasal, benteak, khair, haldu | cum | 54,509.82 |
| 8.2 | Providing wood work in frames of false ceiling, partition etc. sawn and put in position with main batten 125x50mm (nominal) and cross batten 50x38mm (nominal) both at spacing of 600mm center to center. | | - |
| 8.2.1 | Teak wood | cum | 1,06,296.43 |
| 8.2.2 | Sal, bijasal, benteak, khair, haldu | cum | 55,842.86 |
| 8.3 | Providing 40x5mm iron hold fast 40cm long including fixing to frame with 10mm bolts nuts and wooden plug and embedding in Cement Concrete 1:2:4 in blocks of size 30x10x15cm. | each | 64.73 |
| 8.4 | Providing and fixing Dash fastener (for fixing door/ window frames) on C.C. / R.C.C./ Brick masonry surface backing including drilling necessary holes and the cost of bolt etc complete. | | - |
| 8.4.1 | Dash fastener 6x75mm | each | 18.30 |
| 8.4.2 | Dash fastener 10x75mm | each | 24.55 |
| 8.4.3 | Dash fastener 12x100mm | each | 34.82 |
| 8.5 | Extra for additional labour for circular work such as frames of fan lights. | | - |
| 8.5.1 | Teak wood | cum | 10,891.96 |
| 8.5.2 | Sal, bijasal, benteak, khair, haldu | cum | 6,096.43 |
| 8.6 | Providing and fixing 40mm thick paneled or glazed or paneled and glazed shutter frames for doors excluding hinges and paneling. (Area of shutter to be measured without deducting paneling area) | | - |
| 8.6.1 | Teak wood | sqm | 2,594.64 |
| 8.6.2 | Bijasal, benteak, khair, haldu | sqm | 1,578.57 |
| 8.7 | Providing and fixing 35mm thick paneled or glazed or paneled and glazed shutter frames for doors excluding hinges and paneling. (Area of shutter to be measured without deducting paneling area) | | - |
| 8.7.1 | Teak wood | sqm | 2,339.29 |
| 8.7.2 | Bijasal, benteak, khair, haldu | sqm | 1,433.04 |

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| 8.8 | Providing and fixing 30mm thick paneled or glazed or paneled and glazed shutter frames for doors excluding hinges and paneling. (Area of shutter to be measured without deducting paneling area) | | - |
| 8.8.1 | Teak wood | sqm | 2,014.29 |
| 8.8.2 | Bijasal, benteak, khair, haldu | sqm | 1,247.32 |
| 8.9 | Providing and fixing 35mm thick glazed shutter frames for windows, clerestory windows, ventilators etc. using glass panes including M.S. butt hinges with necessary screws but excluding glass panes. (Area of shutter to be measured without deducting paneling area). | | - |
| 8.9.1 | Teak wood | sqm | 2,693.75 |
| 8.9.2 | Bijasal, benteak, khair, haldu wood. | sqm | 1,683.04 |
| 8.10 | Providing and fixing 30mm thick glazed shutter frames for windows, clerestory windows, ventilators etc. using glass panes including M.S. butt hinges with necessary screws but excluding glass panes. (Area of shutter to be measured without deducting paneling area). | | - |
| 8.10.1 | Teak wood | sqm | 2,368.75 |
| 8.10.2 | Bijasal, benteak, khair, haldu wood. | sqm | 1,497.32 |
| 8.11 | Providing and fixing glass panes in glazed or paneled and glazed shutters of doors and window, clearstory windows etc (Only area of glass panes to be measured). | | - |
| 8.11.1 | 4mm thick | sqm | 370.54 |
| 8.11.2 | 5mm thick | sqm | 448.21 |
| 8.11.3 | 6mm thick | sqm | 525.89 |
| 8.11.4 | 8mm thick | sqm | 726.79 |
| 8.12 | Providing and fixing flush door shutters, conforming to IS : 2202 (Part-I), decorative type core of block board construction with frame of first class hard wood and well matched teak ply veneering with vertical grains or cross bands and face veneers on both faces of shutters excluding hinges. | | - |
| 8.12.1 | 40 mm. thick (single leaf) | sqm | 2,202.68 |
| 8.12.2 | 35 mm. thick (single leaf) | sqm | 1,790.18 |
| 8.12.3 | 30 mm. thick (single leaf) | sqm | 1,635.71 |
| 8.12.4 | 25 mm. thick (single leaf) | sqm | 1,481.25 |
| 8.12.5 | 25 mm. thick (double leaf for cupboard shutters with piano type hinges | sqm | 1,490.18 |
| 8.13 | Providing and fixing flush door shutters, conforming to IS 2202 (Part 1), interior grade, commercial type, core of block board construction with frame of first class hard wood and well matched commercial ply veneering with vertical grains, cross bands and face veneers on both faces of shutters excluding hinges. | | - |
| 8.13.1 | 40 mm. thick (single leaf) | sqm | 1,429.46 |
| 8.13.2 | 35 mm. thick (single leaf) | sqm | 1,223.21 |
| 8.13.3 | 30 mm. thick (single leaf) | sqm | 1,068.75 |
| 8.13.4 | 25 mm. thick (single leaf) | sqm | 965.18 |
| 8.13.5 | 25 mm. thick (double leaf for cupboard shutters with piano type hinges | sqm | 975.00 |
| 8.14 | Providing and fixing flush door shutters, core of block board construction with frame of first class hard wood and well matched first class Indian teak ply veneering on one face and commercial ply veneering on the other face of the shutter with vertical grains, cross bands and face veneering excluding hinges. | | - |
| 8.14.1 | 40 mm. thick (single leaf) | sqm | 1,816.07 |
| 8.14.2 | 35 mm. thick (single leaf) | sqm | 1,507.14 |

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| 8.14.3 | 30 mm. thick (single leaf) | sqm | 1,351.79 |
| 8.14.4 | 25 mm. thick (single leaf) | sqm | 1,223.21 |
| 8.14.5 | 25 mm. thick (double leaf for cupboard shutters with piano type hinges | sqm | 1,232.14 |
| 8.15 | Extra for double leaf shutter instead of single leaf. | sqm | 46.43 |
| 8.16 | Providing and fixing PVC membrane foil coated (laminated) flush door shutters, made with core of block board with frame of first class hard wood, coated with 0.30mm membrane pasted with resin using vacuam treatment process complete all but excluding hinges. | | - |
| 8.16.1 | 35 mm thick (single leaf) | sqm | 1,769.64 |
| 8.16.2 | 30 mm thick (single leaf) | sqm | 1,578.57 |
| 8.17 | Providing and fixing PVC membrane foil coated (laminated) flush door shutters, made of partical board coated with 0.30mm membrane pasted with resin using vacuum treatment process complete all but excluding hinges. | | - |
| 8.17.1 | 35 mm thick (single leaf) | sqm | 1,408.93 |
| 8.17.2 | 30 mm thick (single leaf) | sqm | 1,223.21 |
| 8.18 | Providing and fixing lipping with second class teak wood lipping on all edges of shutters. | | - |
| 8.18.1 | 25 x 6 mm size | metre | 37.50 |
| 8.18.2 | 30 x 6 mm size | metre | 43.30 |
| 8.18.3 | 35 x 6 mm size | metre | 48.66 |
| 8.18.4 | 40 x 6 mm size | Metre | 54.91 |
| 8.19 | Extra for providing vision panel not exceeding 0.10 sqm in all type of flush shutters (excluding cost of glass) | | - |
| 8.19.1 | Rectangular or square | each | 61.61 |
| 8.19.2 | Circular | each | 81.70 |
| 8.20 | Extra for providing louvers in flush doors upto 0.20 sqm | | - |
| 8.20.1 | Decorative type doors (50 x 5 mm) | sqm | 170.54 |
| 8.21 | Extra for cutting rebate in flush door shutter (total area of door shutter to be measured). | sqm | 41.07 |
| 8.22 | Providing and fixing paneling in paneled or paneled and glazed shutters for doors etc. (only area of paneling to be measured). Paneling for or paneled and glazed shutters 25 mm to 40 mm thick: | | - |
| 8.22.1 | Teak wood (16mm thick panel) | sqm | 1,644.64 |
| 8.22.2 | Bijsal, Haldu, Benteak, Khair (16mm thick panel) | sqm | 1,041.96 |
| 8.22.3 | 12 mm thick pre-laminated particle board with one side decorative and other side balancing lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS : 12823 (exterior grade). | sqm | 1,005.36 |
| 8.22.4 | 12 mm thick pre-laminated particle board with both side decorative lamination, flat pressed 3 layer & graded (medium density) Grade I, Type II conforming to IS : 12823 (exterior grade). | sqm | 1,046.43 |
| 8.22.5 | 12mm thick pre-laminated particle board flat pressed with decorative lamination on one side and balancing lamination on other side exterior Grade - I MDF Board 12 mm thick confirming to IS:14587, | sqm | 903.57 |
| 8.22.6 | 12mm thick pre-laminated particle board flat pressed with decorative lamination on both sides exterior Grade - I MDF Board 12 mm thick confirming to IS:14587. | sqm | 955.36 |
| 8.22.7 | 12 mm thick ply teak veneering on both faces | sqm | 1,618.75 |
| 8.22.8 | 12 mm thick solid PVC sheet with decorative lamination one side and other side balancing lamination of approved quality and make | sqm | 860.71 |

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| 8.22.9 | 12 mm thick solid PVC sheet with decorative lamination on both sides of approved quality and make | sqm | 912.50 |
| 8.23 | Providing and fixing 35mm thick wire gauge shutter having top and style rail 95mm width, bottom and lock rail 197mm width, using galvanized M.S. wire dia of 0.45 mm for doors, windows, clerestory windows excluding hinges. | | - |
| 8.23.1 | Teak Wood | sqm | 2,581.25 |
| 8.23.2 | Bijasal, Haldu, Benteak, Khair | sqm | 1,685.71 |
| 8.24 | Providing and fixing 30mm thick wire gauge shutter having top and style rail 95mm width, bottom and lock rail 197mm width, using galvanized M.S. wire dia of 0.45mm for doors, windows, clerestory windows excluding hinges. | | - |
| 8.24.1 | Teak Wood | sqm | 2,211.61 |
| 8.24.2 | Bijasal, Haldu, Benteak, Khair | sqm | 1,537.50 |
| 8.25 | Extra for providing fixing galvanized M.S. wire dia of 0.60 mm instead of wire dia 0.45mm to doors, windows and clerestory windows. | sqm | 16.07 |
| 8.26 | Providing and fixing 40mm thick louvered shutters fixed with venetians 12mm thick for window excluding hinges. | | - |
| 8.26.1 | Teak Wood | sqm | 3,334.82 |
| 8.26.2 | Bijasal, Haldu, Benteak, Khair | sqm | 2,165.18 |
| 8.27 | Providing and fixing louvers 50mm wide and 12 mm thick in grooves in clerestory window frames excluding cost of frame. | | - |
| 8.27.1 | Teak Wood | sqm | 1,605.36 |
| 8.27.2 | Bijasal, Haldu, Benteak, Khair | sqm | 1,016.96 |
| 8.28 | Providing and fixing plain jafri of 35x10mm laths placed 35mm apart (frame to be paid separately) including M.S. straps, fixing 50x12mm beading complete. | | - |
| 8.28.1 | Teak Wood | sqm | 1,560.71 |
| 8.28.2 | Bijasal, Haldu, Benteak, Khair | sqm | 1,013.39 |
| 8.29 | Providing and fixing plain jaffri door, windows shutters excluding, 35x10mm laths placed 35 mm apart including fixing 50x12 mm beading complete excluding hinges with. | | - |
| 8.29.1 | Teak Wood | sqm | 2,471.43 |
| 8.29.2 | Bijasal, Haldu, Benteak, Khair | sqm | 1,589.29 |
| 8.30 | Providing 50x50x50mm thick wood plugs including cutting brick work and fixing in Cm 1:3 (1 cement :3 sand). | each | 18.30 |
| 8.31 | Providing and fixing teak wood plain lining tongue and groove and including wooden/ rawl plugs complete with necessary screws and priming coat on exposed surface. | | - |
| 8.31.1 | 38 mm thick | sqm | 4,532.14 |
| 8.31.2 | 25 mm thick | sqm | 2,895.54 |
| 8.31.3 | 19 mm thick | sqm | 2,351.79 |
| 8.32 | Providing and fixing in wall lining 12mm thick flat pressed three layer (medium density) particle board pre-laminated one side decorative lamination on other side balancing lamination exterior Grade - I MDF Board 12 mm thick confirming to IS:14587 marked including priming coat on unexposed surface, with necessary fixing arrangement and screws etc. complete. | sqm | 868.75 |
| 8.33 | Providing and fixing teak wood jamb lining with necessary screws, priming coat on exposed surfaces etc complete. (only jamb lining area is to be measured) | | - |
| 8.33.1 | 40 mm thick | sqm | 5,100.00 |
| 8.33.2 | 25 mm thick | sqm | 3,537.50 |

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| 8.34 | Providing and fixing 4mm thick ply wood plain lining with necessary screws and primary coat on exposed surface complete with ply facing. | | - |
| 8.34.1 | Teak ply faces | sqm | 859.82 |
| 8.34.2 | Commercial ply faces. | sqm | 535.71 |
| 8.35 | Providing and fixing wall paneling frame made of commercial grade 12mm thick water proof ply strips 100mm wide at 600mm apart center to center vertically and horizontally with necessary screws, wooden plugs etc complete as required. | sqm | 492.86 |
| 8.36 | Providing and fixing commercial grade water proof ply for wall paneling on wooden frame with necessary nails complete as required. | | - |
| 8.36.1 | 19mm | sqm | 1,099.11 |
| 8.36.2 | 12mm | sqm | 738.39 |
| 8.36.3 | 6mm | sqm | 489.29 |
| 8.37 | Providing and fixing approved shade veneering on wood wall paneling complete as required. | sqm | 629.46 |
| 8.38 | Providing and fixing 25mm thick teak wood plain skirting with necessary screws and a priming coat with wood primer on unexposed surfaces. | sqm | 3,199.11 |
| 8.39 | Providing and fixing teak wood moulded beading to doors windows frames including necessary screws and primary coat on exposed surface. | | - |
| 8.39.1 | 19x12mm | metre | 45.09 |
| 8.39.2 | 25x12 mm | metre | 72.32 |
| 8.39.3 | 25x25mm | metre | 108.93 |
| 8.39.4 | 50x12mm | metre | 108.93 |
| 8.39.5 | 50x19mm | metre | 149.11 |
| 8.40 | Providing and fixing 200 mm wide teak wood moulding such as base moulding, chair rail, architrave, moulded posts moulding skirting including necessary screws and painting on unexposed surfaces with wood primer etc complete for per cm thick. | metre | 200.00 |
| 8.41 | Providing and fixing teak wood archivolt having 100 mm projectors including necessary screws and painting of unexposed surfaces with approved wood primer etc complete for per cm width. | metre | 123.21 |
| 8.42 | Providing and fixing 12mm thick, 100mm wide pelmet with 6mm thick top cover, 20mm dia nickel plated M.S. pipe heavy duty curtain rod and bracket including fixing with 10cm long 25x3mm M.S. flat, rawl plugs, screws etc complete. | | - |
| 8.42.1 | Teak wood | metre | 349.11 |
| 8.42.2 | 12 mm thick ply board, commercial veneering both face. | metre | 241.96 |
| 8.42.3 | 12 mm thick ply board, commercial veneering on one face and teak veneering on other face. | metre | 310.71 |
| 8.43 | Providing and fixing 12mm thick, 150mm wide pelmet with 6mm thick top cover, 20mm dia nickel plated M.S. pipe (heavy duty) curtain rod and bracket including fixing with 10cm long 25x3mm M.S. flat, rawl plugs etc complete. | | - |
| 8.43.1 | Teak wood | metre | 411.61 |
| 8.43.2 | 12 mm thick ply board, commercial veneering both face. | metre | 305.36 |
| 8.43.3 | 12 mm thick ply board, commercial veneering on one face and teak veneering on other face. | metre | 410.71 |
| 8.44 | Extra for providing and fixing heavy duty stainless steel pipe for curtain rod with two stainless steel brackets in pelmets instead of M.S. curtain rod of 20mm dia and M.S. brackets. (actual length of rod to be measured) | | - |
| 8.44.1 | 12 mm dia | metre | 87.95 |

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| 8.44.2 | 19/20 mm dia | metre | 169.64 |
| 8.44.3 | 25 mm dia | metre | 204.46 |
| 8.45 | Providing and fixing heavy duty stainless steel pipe for curtain/ cloth hanging with two stainless steel brackets in wooden pelmet or wardrobe or any other space including screws and or plastic rawl plugs etc. wherever necessary. | | - |
| 8.45.1 | With 20 mm dia pipe | metre | 147.32 |
| 8.45.2 | With 25 mm dia pipe | metre | 169.64 |
| 8.45.3 | Elliptical pipe made from 25mm dia pipe | metre | 204.46 |
| 8.46 | Providing and fixing decorative curtain rod assembly made of 32mm dia aluminium pipe covered with decorative finish plastic sleeve, 2 Nos or more 100x50x20mm size decorative wooden bracket, 2 Nos 100x50mm dia decorative wooden rod holding end plugs and 50mm dia wooden curtain rings 1 nos for every 100mm of length of curtain rod including PVC rawl plugs etc complete: | metre | 234.82 |
| 8.47 | Providing and fixing Indian teak plywood 4 mm thick in partition including fixing to frames with brass screws etc. complete with 50x12mm teak wood beadings (frames to be paid separately). | sqm | 841.96 |
| 8.48 | Providing and fixing plain asbestos cement sheet 6 mm thick in partition including fixing to frames with necessary screws etc. complete with 50x12mm teak wood beadings (frames to be paid separately). | sqm | 501.79 |
| 8.49 | Providing and fixing 4 mm thick Decorative plywood of approved quality in partition including fixing to frames with necessary screws etc. complete with 50 x 12 mm teak wood beadings (frames to be paid separately). | sqm | 1,146.43 |
| 8.50 | Providing and fixing 25 mm thick wooden shelves supported on 40x40x6 mm T or L iron brackets fixed at suitable distance in 75x75x150mm blocks of M-15 grade cement concrete. | | - |
| 8.50.1 | Teak wood | sqm | 3,205.36 |
| 8.50.2 | Bijasal, Haldu, Benteak, Khair | sqm | 2,138.39 |
| 8.51 | Providing and fixing 38 mm thick wooden shelves supported on 40x40x6 mm T or L in brackets fixed at suitable distance in 75x75x150mm blocks of cement concrete 1:2:4: | | - |
| 8.51.1 | Teak wood | sqm | 4,081.25 |
| 8.51.2 | Bijasal, Haldu, Benteak, Khair | sqm | 2,638.39 |
| 8.52 | Providing, and fixing M.S. round and square bars with MS flat of required pattern in wooden frames for windows & clerestory windows including applying a priming coat of red oxide zinc chromate primer, welding etc complete | | - |
| 8.52.1 | Plain grill | kg | 60.71 |
| 8.52.2 | Ornamental grill | kg | 67.86 |
| 8.53 | Providing and fixing expanded metal 20x60 mm stands 3.25 mm wide and 1.60mm thick to window including 62x19mm beading to teak wood including priming coat of red oxide zinc chromate primer. | sqm | 829.46 |
| 8.54 | Providing & fixing hard drawn steel wire fabric 75x25mm mesh of weight not less than 7.75 kg. per sqm to doors, window frames including 62x19mm teak wooden beading including priming coat of red oxide zinc chromate primer. | sqm | 954.46 |
| 8.55 | Providing and fixing and galvanized wire mesh of I.S. gauge designation 85 G. with wires 0.56 mm dia to windows and clerestory windows including 19x12mm teak wood beading including priming coat of red oxide zinc chromate primer. | sqm | 395.54 |

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| 8.56 | Providing and fixing stainless steel wire mesh of average width of aperture 1.56mm with wire of dia 0.45mm to doors, windows and clerestory windows including 19x12mm teak wood beading etc. complete. | sqm | 579.46 |
| 8.57 | Providing sal wood beams, joints (karries) including hosting fixing in position and applying wood preservative on exposed surface etc. with Salwood. | cum | 53,583.04 |
| 8.58 | Providing and fixing bright finished brass butt hinges with brass polished MS screws complete: | | - |
| 8.58.1 | 125x85x5.50 mm (Heavy Type) | each | 218.75 |
| 8.58.2 | 100x85x5.50 mm (Heavy Type) | each | 174.11 |
| 8.58.3 | 75x65x4.00 mm (Heavy Type) | each | 67.41 |
| 8.58.4 | 125x70x4.00 mm (Ordinary Type) | each | 136.61 |
| 8.58.5 | 100x70x4.00 mm (Ordinary Type) | each | 108.93 |
| 8.58.6 | 75x40x2.50 mm (Ordinary Type) | each | 79.02 |
| 8.58.7 | 50x40x2.50 mm (Ordinary Type) | each | 50.89 |
| 8.59 | Providing and fixing bright finished brass parliamentary hinges with brass polished MS screws complete: | | - |
| 8.59.1 | 150x125x27x5 mm | each | 377.68 |
| 8.59.2 | 125x125x27x5 mm | each | 314.29 |
| 8.59.3 | 100x125x27x5 mm | each | 255.36 |
| 8.59.4 | 75x100x20x3.20 mm | each | 97.32 |
| 8.60 | Providing and fixing bright finished brass sliding door bolt with nuts and brass polished MS screws complete: | | - |
| 8.60.1 | 300x16mm | each | 424.11 |
| 8.60.2 | 250x16mm | each | 307.14 |
| 8.61 | Providing and fixing brass door latch with brass polished MS screws complete: | | - |
| 8.61.1 | 300x16x5 mm | each | 355.36 |
| 8.61.2 | 250x16x5 mm | each | 239.29 |
| 8.62 | Providing and fixing bright finished brass tower bolts (barrel type) with brass polished MS screws complete: | | - |
| 8.62.1 | 250x10mm | each | 246.43 |
| 8.62.2 | 200x10mm | each | 206.25 |
| 8.62.3 | 150x10mm | each | 157.14 |
| 8.62.4 | 100x10mm | each | 106.25 |
| 8.63 | Providing and fixing bright finished brass flush bolt with brass polished MS screws complete: | | - |
| 8.63.1 | 250 mm | each | 240.18 |
| 8.63.2 | 150 mm | each | 147.32 |
| 8.63.3 | 100 mm | each | 100.00 |
| 8.64 | Providing and fixing bright finished brass indicating bolt (vacant/ engaged) with brass polished MS screws complete: | each | 155.36 |
| 8.65 | Providing and fixing bright finished brass door handles with brass polished MS screws complete: | | - |
| 8.65.1 | 125 mm | each | 49.55 |
| 8.65.2 | 100 mm | each | 43.75 |
| 8.65.3 | 75 mm | each | 37.95 |
| 8.66 | Providing and fixing bright finished brass furniture handles 50 mm with brass screws/nuts etc complete. | each | 47.32 |
| 8.67 | Providing and fixing of bright finished brass mortise latch and lock 100x65mm with six levers and a pair of lever handles with brass polished MS screws etc. complete. | each | 866.96 |

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| 8.68 | Providing and fixing of bright finished brass mortise latch 100X65mm and pair of lever handles with brass polished MS screws etc. complete. | each | 778.57 |
| 8.69 | Providing and fixing bright finished brass rim latch and lock 100mm and pair of knob with brass polished MS screws etc. Complete | each | 402.68 |
| 8.70 | Providing and fixing bright finished brass 100mm rim latch with a dead bolt and a pair of knobs, brass polished MS screws etc. complete. | each | 378.57 |
| 8.71 | Providing and fixing special quality bright finished brass cupboard or wardrobe locks with four levers including necessary screws etc. complete (best make of approved quality) : | | - |
| 8.71.1 | 40 mm | each | 92.86 |
| 8.71.2 | 50 mm | each | 100.89 |
| 8.71.3 | 65 mm | each | 115.18 |
| 8.71.4 | 75 mm | each | 132.14 |
| 8.72 | Providing and fixing 50mm bright finished brass cupboard or ward robe knob with brass screws. | each | 27.68 |
| 8.73 | Providing and fixing 150mm bright finished brass floor door stopper with rubber cushion & brass polished MS screws etc complete to suit the shutter thickness. | each | 65.18 |
| 8.74 | Providing and fixing bright finished brass hard drawn hooks & eyes with brass polished MS screws etc complete. | | - |
| 8.74.1 | 300 mm | each | 75.00 |
| 8.74.2 | 250 mm | each | 69.20 |
| 8.74.3 | 200 mm | each | 57.14 |
| 8.74.4 | 150 mm | each | 45.54 |
| 8.74.5 | 100 mm | each | 32.14 |
| 8.75 | Providing and fixing bright finished brass hasp and staple (safety type) with brass polished MS screws complete | | - |
| 8.75.1 | 150 mm | each | 74.11 |
| 8.75.2 | 115 mm | each | 50.45 |
| 8.75.3 | 90 mm | each | 38.84 |
| 8.76 | Providing and fixing bright finished brass hanging door stopper with necessary brass finished MS steel screws complete. | each | 39.29 |
| 8.77 | Providing and fixing antique/ SS finished brass butt hinges with antique/ SS polished MS screw complete: | | - |
| 8.77.1 | 125x85x5.50mm (Heavy Type) | each | 228.57 |
| 8.77.2 | 100x85x5.50 mm (Heavy Type) | each | 183.04 |
| 8.77.3 | 75x65x4.00 mm (Heavy Type) | each | 83.04 |
| 8.77.4 | 125x70x4.00mm (Ordinary Type) | each | 141.07 |
| 8.77.5 | 100x70x4.00 mm (Ordinary Type) | each | 112.50 |
| 8.77.6 | 75x40x2.50 mm (Ordinary Type) | each | 70.98 |
| 8.77.7 | 50x40x2.50 mm (Ordinary Type) | each | 57.14 |
| 8.78 | Providing and fixing antique/ SS finished brass parliamentary hinges with antique/ SS polished MS screw complete: | | - |
| 8.78.1 | 150x125x27x5 mm | each | 394.64 |
| 8.78.2 | 125x125x27x5 mm | each | 328.57 |
| 8.78.3 | 100x125x27x5 mm | each | 267.86 |
| 8.78.4 | 75x100x20x3.20 mm | each | 101.79 |
| 8.79 | Providing and fixing antique/ SS finished brass sliding door bolt with necessary bolts, nuts and antique/ SS polished MS screw complete: | | - |
| 8.79.1 | 300x16mm | each | 442.86 |
| 8.79.2 | 250 x 16mm | each | 436.61 |

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| 8.80 | Providing and fixing antique/ SS finished brass door latch with antique/ SS polished MS screw complete: | | - |
| 8.80.1 | 300 x16x5 mm | each | 378.57 |
| 8.80.2 | 250x16x5 mm | each | 250.00 |
| 8.81 | Providing and fixing antique/ SS finished brass tower bolts (Barrel type) with antique/ SS polished MS screw complete: | | - |
| 8.81.1 | 250 x10 mm | each | 265.18 |
| 8.81.2 | 200 x10mm | each | 222.32 |
| 8.81.3 | 150 x 10 mm | each | 168.75 |
| 8.81.4 | 100 x10 mm | each | 113.39 |
| 8.82 | Providing and fixing antique/ SS finished brass flush bolts with antique/ SS polished MS screw complete: | | - |
| 8.82.1 | 250 mm | each | 251.79 |
| 8.82.2 | 150 mm | each | 154.46 |
| 8.82.3 | 100 mm | each | 106.25 |
| 8.83 | Providing and fixing antique/ SS finished brass indicating bolt (Vacant/ engaged) with antique/ SS polished MS screw complete: | each | 160.71 |
| 8.84 | Providing and fixing antique/ SS finished brass handles with antique/ SS polished MS screw complete: | | - |
| 8.84.1 | 125 mm | each | 52.23 |
| 8.84.2 | 100 mm | each | 46.43 |
| 8.84.3 | 75 mm | each | 27.68 |
| 8.85 | Providing and fixing antique/ SS finished brass furniture handles 50 mm with antique/ SS polished MS screws/nuts etc complete. | each | 46.43 |
| 8.86 | Providing and fixing 100mm antique/ SS finished brass mortise latch and lock with six levers and a pair of lever handles with antique/ SS polished MS screw complete. | each | 907.14 |
| 8.87 | Providing and fixing antique/ SS finished brass 100mm mortise latch with one dead bolt and pair of lever handles with antique/ SS polished MS screw complete. | each | 815.18 |
| 8.88 | Providing and fixing 100 mm antique/ SS finished brass rim latch and lock with a pair of knobs with antique/ SS polished MS screw complete. | each | 418.75 |
| 8.89 | Providing & fixing 100mm antique/ SS finished brass rim latch with a dead bolt and pair of knobs with antique/ SS polished MS screw complete. | each | 395.54 |
| 8.90 | Providing & fixing 150mm antique/ SS finished brass floor door stopper with rubber cushion and antique/ SS polished MS screw complete to suit the shutter thickness. | each | 68.75 |
| 8.91 | Providing and fixing antique/ SS finished brass hard drawn hooks and eyes with antique/ SS polished MS screw complete: | | - |
| 8.91.1 | 300 mm | each | 78.13 |
| 8.91.2 | 250 mm | each | 72.32 |
| 8.91.3 | 200 mm | each | 59.38 |
| 8.91.4 | 150 mm | each | 47.77 |
| 8.91.5 | 100 mm | each | 35.27 |
| 8.92 | Providing and fixing antique/ SS finished brass hasp and staple (safety type) with antique/ SS polished MS screw complete: | | - |
| 8.92.1 | 150 mm | each | 77.68 |
| 8.92.2 | 115 mm | each | 52.68 |
| 8.92.3 | 90 mm | each | 41.07 |
| 8.93 | Providing and fixing antique/ SS finished brass hanging door stopper with necessary antique/ SS finished MS steel screws complete. | each | 44.20 |

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| 8.94 | Providing and fixing M.S. bright finished or black enameled Butt hinges IS : 1341 marked with necessary iron screws: | | - |
| 8.94.1 | 125x65x2.12mm | each | 26.79 |
| 8.94.2 | 100x58x1.90 mm | each | 18.30 |
| 8.94.3 | 75x47x1.70 mm | each | 12.50 |
| 8.94.4 | 50x37x1.50 mm | each | 8.39 |
| 8.95 | Providing and fixing M.S. bright finished or black enameled Parliamentary hinges with necessary iron screws: | | - |
| 8.95.1 | 150x125x27x2.80 mm | each | 70.09 |
| 8.95.2 | 125x125x27x2.80 mm | each | 60.27 |
| 8.95.3 | 100x125x27x2.80 mm | each | 50.45 |
| 8.95.4 | 75x100x20x2.24 mm | each | 36.61 |
| 8.96 | Providing and fixing M.S. bright finished or black enameled Double spring hinges with iron screws: | | - |
| 8.96.1 | 150 mm | each | 283.04 |
| 8.96.2 | 125 mm | each | 255.36 |
| 8.96.3 | 100 mm | each | 220.54 |
| 8.97 | Providing and fixing M.S. bright finished or black enameled Piano hinges 1mm thick with 35mm wide flange including necessary iron screws. | metre | 87.05 |
| 8.98 | Providing and fixing M.S. nickel plated Piano hinges 1mm thick with 35mm wide flange including necessary iron screws. | metre | 99.11 |
| 8.99 | Providing and fixing M.S. bright finished or black enameled sliding door bolts with bolts, nuts and necessary iron screws: | | - |
| 8.99.1 | 300x16mm | each | 69.20 |
| 8.99.2 | 250 x 16 mm | each | 64.73 |
| 8.100 | Providing and fixing M.S. bright finished or black enameled door latch with necessary iron screws: | | - |
| 8.100.1 | 300x20x6mm | each | 47.77 |
| 8.100.2 | 250x20x6mm | each | 45.09 |
| 8.101 | Providing and fixing M.S. bright finished or black enameled 85x12mm pull bolt lock with necessary nuts and necessary iron screws. | each | 31.70 |
| 8.102 | Providing and fixing M.S. bright finished or black enameled Tower bolts (Barrel type) with necessary iron screws: | | - |
| 8.102.1 | 250 mm | each | 30.80 |
| 8.102.2 | 200 mm | each | 25.89 |
| 8.102.3 | 150 mm | each | 20.54 |
| 8.102.4 | 100 mm | each | 14.73 |
| 8.103 | Providing and fixing M.S. bright finished or black enameled handles with necessary iron screws: | | - |
| 8.103.1 | 125 mm | each | 45.54 |
| 8.103.2 | 100 mm | each | 40.63 |
| 8.103.3 | 75 mm | each | 20.09 |
| 8.104 | Providing and fixing M.S. bright finished or black enameled hooks and eyes with necessary iron screws: | | - |
| 8.104.1 | 300 mm | each | 16.07 |
| 8.104. | 250 mm | each | 13.84 |

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| 8.104.3 | 200 mm | each | 11.61 |
| 8.104.4 | 150 mm | each | 9.82 |
| 8.104.5 | 100 mm | each | 6.96 |
| 8.105 | Providing and fixing M.S. bright finished or black enameled safety hasp and staples with necessary iron screws: | | - |
| 8.105.1 | 150 mm | each | 31.70 |
| 8.105.2 | 115 mm | each | 12.05 |
| 8.105.3 | 90 mm | each | 10.27 |
| 8.106 | Providing and fixing MS bright finished single hanging door stopper with necessary MS steel screws complete. | each | 11.16 |
| 8.107 | Providing and fixing powder coated M.S. butt hinges with necessary iron screws: | | - |
| 8.107.1 | 125x65x2.12 mm | each | 32.59 |
| 8.107.2 | 100x58x1.90 mm | each | 21.88 |
| 8.107.3 | 75x47x1.7 mm | each | 14.73 |
| 8.107.4 | 50x37x1.5 mm | each | 8.30 |
| 8.108 | Providing and fixing powder coated M.S. parliamentary hinges with necessary iron screws: | | - |
| 8.108.1 | 150x125x27x2.8mm | each | 72.77 |
| 8.108.2 | 125x125x27x2.8mm | each | 62.95 |
| 8.108.3 | 100x125x27x2.8 mm | each | 52.68 |
| 8.108.4 | 75x100x20x2.24 mm | each | 35.27 |
| 8.109 | Providing and fixing powder coated M.S. piano hinges with necessary iron screws: | | - |
| 8.109.1 | Overall width 35mm | each | 87.05 |
| 8.109.2 | Overall width 50 mm | each | 99.11 |
| 8.109.3 | Overall width 65 mm | each | 131.25 |
| 8.110 | Providing and fixing powder coated M.S. pull bolt lock size 85x42mm with bolts, nut and necessary iron screws. | each | 33.04 |
| 8.111 | Providing and fixing powder coated M.S. Safety chain with necessary fixtures for doors. (Weighing not less than 200 gms.) | each | 28.13 |
| 8.112 | Providing and fixing powder coated M.S. sliding door bolts with bolts, nuts and necessary iron screws: | | - |
| 8.112.1 | 300x16 mm | each | 120.54 |
| 8.112.2 | 250x16 mm | each | 113.39 |
| 8.113 | Providing and fixing powder coated M.S. door latch with necessary iron screws: | | - |
| 8.113.1 | 300x20x16 mm | each | 41.07 |
| 8.113.2 | 250x20x16 mm | each | 36.61 |
| 8.114 | Providing and fixing powder coated M.S. pull bolt lock of size 85 x 12mm with necessary bolts, nuts and necessary iron screws. | each | 30.36 |

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| 8.115 | Providing and fixing powder coated M.S. tower bolts (Barrel type) with necessary iron screws: | | - |
| 8.115.1 | 250 x10mm | each | 37.95 |
| 8.115.2 | 200 x10mm | each | 29.91 |
| 8.115.3 | 150 x10mm | each | 24.55 |
| 8.115.4 | 100 x10mm | each | 16.96 |
| 8.116 | Providing and fixing powder coated M.S. handles with necessary iron screws: | | - |
| 8.116.1 | 125 mm | each | 54.91 |
| 8.116.2 | 100 mm | each | 40.63 |
| 8.116.3 | 75 mm | each | 30.80 |
| 8.117 | Providing and fixing powder coated M.S. hooks and eyes necessary iron screws: | | - |
| 8.117.1 | 300 mm | each | 39.73 |
| 8.117.2 | 250 mm | each | 66.07 |
| 8.117.3 | 200 mm | each | 79.91 |
| 8.117.4 | 150 mm | each | 93.75 |
| 8.117.5 | 100 mm | each | 107.14 |
| 8.118 | Providing and fixing powder coated M.S. hasp and staples (Safety type) necessary iron screws: | | - |
| 8.118.1 | 150 mm | each | 33.04 |
| 8.118.2 | 115 mm | each | 12.50 |
| 8.118.3 | 90 mm | each | 11.16 |
| 8.119 | Providing and fixing powder coated MS hanging door stopper with necessary powder coated MS steel screws complete. | each | 13.39 |
| 8.120 | Providing and fixing aluminium sliding door bolts with 16mm rod, necessary nickel plated iron nuts bolts and screws etc complete. | | - |
| 8.120.1 | 300x16mm | each | 150.89 |
| 8.120.2 | 250x16mm | each | 125.89 |
| 8.121 | Providing and fixing aluminium door latch with 12mm rod, necessary nickel plated iron nuts bolts and screws etc complete. | | - |
| 8.121.1 | 300x12mm | each | 63.39 |
| 8.121.2 | 250x12mm | each | 45.98 |
| 8.122 | Providing and fixing aluminium tower bolts (Barrel type) with necessary nickel plated iron screws etc complete. | | - |
| 8.122.1 | 250 x10mm | each | 62.95 |
| 8.122.2 | 200 x10mm | each | 51.34 |
| 8.122.3 | 150 x10mm | each | 39.73 |
| 8.122.4 | 100 x10mm | each | 27.68 |
| 8.122. | 75 x10mm | each | 21.88 |

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| 8.123 | Providing and fixing aluminium door handles 2.5mm thick with necessary nickel plated iron screws etc complete. | | - |
| 8.123.1 | 150 mm | each | 27.23 |
| 8.123.2 | 125 mm | each | 23.21 |
| 8.123.3 | 100 mm | each | 19.20 |
| 8.124 | Providing and fixing hanging aluminium door stopper with necessary nickel plated iron screws etc complete. | | - |
| 8.124.1 | Single | each | 23.66 |
| 8.124.2 | Double | each | 33.04 |
| 8.125 | Providing and fixing aluminium door mounted door stopper with necessary nickel plated iron screws etc complete. | | - |
| 8.125.1 | 100 mm long | each | 40.18 |
| 8.125.2 | 75 mm long | each | 34.38 |
| 8.125.3 | 60 mm long | each | 28.57 |
| 8.125.4 | 50 mm long | each | 22.77 |
| 8.126 | Providing and fixing powder coated aluminium sliding door bolts with 16mm rod, necessary M.S. nuts bolts and screws etc complete. | | - |
| 8.126.1 | 300x16mm | each | 156.25 |
| 8.126.2 | 250x16mm | each | 133.93 |
| 8.127 | Providing and fixing powder coated aluminium door latch with 12mm rod, necessary M.S. nuts bolts and screws etc complete. | | - |
| 8.127.1 | 300x12mm | each | 66.96 |
| 8.127.2 | 250x12mm | each | 48.66 |
| 8.128 | Providing and fixing powder coated aluminium tower bolts (Barrel type) with necessary M.S. screws etc complete. | | - |
| 8.128.1 | 250 x10mm | each | 66.52 |
| 8.128.2 | 200 x10mm | each | 53.57 |
| 8.128.3 | 150 x10mm | each | 41.52 |
| 8.128.4 | 100 x10mm | each | 28.57 |
| 8.128.5 | 75 x10mm | each | 22.77 |
| 8.129 | Providing and fixing powder coated aluminium door handles 2.5mm thick with necessary M.S. screws etc complete. | | - |
| 8.129.1 | 150 mm | each | 28.57 |
| 8.129.2 | 125 mm | each | 24.55 |
| 8.129.3 | 100 mm | each | 20.09 |
| 8.130 | Providing and fixing hanging powder coated aluminium door stopper with necessary M.S. screws etc complete. | | - |
| 8.130.1 | Single | each | 24.55 |
| 8.130. | Double | each | 34.38 |

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| 8.131 | Providing and fixing powder coated aluminium door mounted door stopper with necessary M.S. screws etc complete. | | - |
| 8.131.1 | 100 mm long | each | 41.96 |
| 8.131.2 | 75 mm long | each | 35.71 |
| 8.131.3 | 60 mm long | each | 29.46 |
| 8.131.4 | 50 mm long | each | 23.66 |
| 8.132 | Providing and fixing stainless steel butt hinges IS : 12817 marked with necessary stainless steel screws etc complete. | | - |
| 8.132.1 | 150x2.5mm (heavy) | each | 87.05 |
| 8.132.2 | 125x2.5mm (heavy) | each | 68.30 |
| 8.132.3 | 100x2.5mm (heavy) | each | 46.88 |
| 8.132.4 | 75x2.5mm (heavy) | each | 30.80 |
| 8.132.5 | 125x1.9mm (light) | each | 53.57 |
| 8.132.6 | 100x1.7mm (light) | each | 35.71 |
| 8.132.7 | 75x1.7mm (light) | each | 25.00 |
| 8.133 | Providing and fixing stainless steel cutt hinges having thickness 1.2mm necessary stainless steel screws etc complete. | | - |
| 8.133.1 | 75x19x13mm | each | 19.64 |
| 8.133.2 | 60x19x13mm | each | 19.20 |
| 8.133.3 | 50x15x10mm | each | 17.86 |
| 8.134 | Providing and fixing stainless steel narrow hinges having thickness 1.2mm necessary stainless steel screws etc complete. | | - |
| 8.134.1 | 75x18x18mm | each | 20.09 |
| 8.134.2 | 60x18x18mm | each | 19.20 |
| 8.134.3 | 75x15x15mm | each | 19.64 |
| 8.134.4 | 60x15x15mm | each | 19.20 |
| 8.135 | Providing and fixing stainless steel parliamentary hinges having thickness 2.5mm necessary stainless steel screws etc complete. | | - |
| 8.135.1 | 150x100mm | each | 119.64 |
| 8.135.2 | 125x100mm | each | 106.25 |
| 8.135.3 | 100x100mm | each | 91.96 |
| 8.135.4 | 75x100mm | each | 79.91 |
| 8.136 | Providing and fixing stainless steel piano hinges with necessary stainless steel screws etc complete. | | - |
| 8.136.1 | Overall width 35mm | each | 123.21 |
| 8.136.2 | Overall width 25 mm | each | 109.82 |

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| 8.137 | Providing and fixing stainless steel sliding door bolts with 16mm rod, 2.5mm thick flap, necessary stainless steel nuts bolts and screws etc complete. | | - |
| 8.137.1 | 300mm | each | 212.50 |
| 8.137.2 | 250mm | each | 203.57 |
| 8.138 | Providing and fixing stainless steel door latch with 12mm rod, 2.5mm thick flap, necessary stainless steel screws etc complete. | | - |
| 8.138.1 | 300mm | each | 82.59 |
| 8.138.2 | 250mm | each | 75.89 |
| 8.139 | Providing and fixing stainless steel tower bolts (Barrel type) with necessary stainless steel screws etc complete. | | - |
| 8.139.1 | 250 x10mm | each | 86.61 |
| 8.139.2 | 200 x10mm | each | 62.95 |
| 8.139.3 | 150 x10mm | each | 51.34 |
| 8.139.4 | 100 x10mm | each | 36.61 |
| 8.139.5 | 75 x10mm | each | 32.14 |
| 8.140 | Providing and fixing stainless steel door handles having flap thickness 2.5mm, necessary stainless steel screws etc complete. | | - |
| 8.140.1 | 150 mm | each | 21.88 |
| 8.140.2 | 125 mm | each | 20.09 |
| 8.140.3 | 100 mm | each | 19.64 |
| 8.141 | Providing and fixing Stainless steel "D" shape door handles made of 10mm dia rod with necessary stainless steel screws etc complete. | | - |
| 8.141.1 | 200 mm | each | 57.14 |
| 8.141.2 | 150 mm | each | 44.20 |
| 8.141.3 | 125 mm | each | 37.50 |
| 8.141.4 | 100 mm | each | 31.25 |
| 8.141.5 | 75 mm | each | 24.55 |
| 8.142 | Providing and fixing stainless steel hooks and eyes with 5.6mm dia rod with necessary stainless steel screws etc complete. | | - |
| 8.142.1 | 200 mm | each | 24.11 |
| 8.142.2 | 150 mm | each | 22.77 |
| 8.142.3 | 125 mm | each | 20.98 |
| 8.142.4 | 100 mm | each | 19.64 |
| 8.143 | Providing and fixing stainless steel hanging door stopper with necessary stainless steel screws complete. | | - |
| 8.143.1 | Single | each | 41.96 |
| 8.143.2 | Double | each | 58.04 |

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| 8.144 | Providing and fixing stainless steel fixed stopper with necessary stainless steel screws complete. | | - |
| 8.144.1 | 100 mm long | each | 86.16 |
| 8.144.2 | 75 mm long | each | 72.32 |
| 8.144.3 | 60 mm long | each | 65.63 |
| 8.144.4 | 50 mm long | each | 58.04 |
| 8.145 | Providing and fixing magnetic catcher in cupboard / ward robe shutters including fixing with necessary screws etc. complete. | | - |
| 8.145.1 | Triple strip vertical type. | each | 18.75 |
| 8.145.2 | Double strip (horizontal type). | each | 14.73 |
| 8.146 | Providing and fixing powder coated telescopic drawer channels with necessary screws etc. complete as per directions of Engineer-in-charge. | | - |
| 8.146.1 | 300 mm long | pair | 160.71 |
| 8.146.2 | 400 mm long | pair | 211.61 |
| 8.146.3 | 500 mm long | pair | 263.39 |
| 8.147 | Providing and fixing sliding arrangement in racks/ cupboards/ cabinets shutter by P/F stainless steel rollers to run inside C or E aluminium channel section (The payment of C or E channel shall be made separately) | each | 12.95 |
| 8.148 | Providing and fixing factory made UPVC door frame made of UPVC profile section having an overall dimension as below (tolerance ± 1mm) with wall thickness 2.0mm ± 0.2mm, corners of the door frame to be jointed with galvanized brackets and stainless steel screws, joints mitred and plastic welded. The hinge side vertical of the frames reinforced by galvanized M.S. tube of size 19 X 19mm and 1mm ± 0.1mm wall thickness and 3 nos. stainless steel hinges fixed to the frame complete as per manufacturers specification and direction of Engineer-in-charge | | - |
| 8.148.1 | Extruded section Profile size 48x40 mm. | metre | 170.54 |
| 8.148.2 | Extruded section Profile size 42x50 mm. | metre | 175.00 |
| 8.149 | Providing and fixing factory made PVC door shutters of specified thickness made of styles and rails of a UPVC hollow section of specified size 59x24 mm and wall thickness 2 mm ± 0.2 mm with inbuilt edging on both sides. The styles and rails mitred and joined at the corners by means of M.S. galvanised/ plastic brackets of size 75x220 mm having wall thickness 1.0 mm and stainless steel screws. | | - |
| 8.149.1 | 24 mm thick door shutters with styles and rails of size 59x24 mm | sqm | 2,141.96 |
| 8.149.2 | 30 mm thick door shutters with styles and rails of size 60x30 mm | sqm | 2,221.43 |

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| 8.150 | Providing and fixing factory made 25mm thick PVC flush door shutters made out of a one piece Multi chamber extruded PVC section of the size of 762mm X 25mm or less as per requirement with an average wall thickness of 1mm ± 0.3mm. PVC foam end cap of size 23x10mm are provided on both vertical edges to ensure the overall thickness of 25mm. An M.S. tube having dimensions 19mm x 19mm is inserted along the hinge side of the door. Core of the door shutter should be filled with High Density Polyurethane foam. The Top & Bottom edges of the shutter are covered with an end-cap of the size 25mm X 11mm. Door shutter shall be reinforced with special polymeric reinforcements as per manufactures' specification. | sqm | 2,306.25 |
| 8.151 | Providing and fixing factory made P.V.C. door frame of size 50x47mm with a wall thickness of 5mm, made out of extruded 5mm rigid PVC foam sheet mitred at corners and joined with 2 Nos of 150mm long brackets of 15x15mm M.S. square tube, the vertical door profiles to be reinforced with 19x19mm M.S. square tube of 19 gauge, EPDM rubber gasket weather seal to be provided through out the frame. The door frame to be fixed to the wall using M.S. screws of 65/100mm size complete as per manufacturers specification and direction of Engineer-in-Charge. | metre | 308.93 |
| 8.152 | Providing and fixing 30mm thick factory made panel PVC door shutter consisting of frame made out of M.S. tubes of 19 gauge thickness and size of 19mm x 19mm for styles and 15x15mm for top & bottom rails. M.S. frame shall have a coat of steel primers of approved make and manufacture. M.S. frame covered with 5mm thick heat moulded PVC 'C' channel of size 30mm thickness, 70mm width out of which 50mm shall be flat and 20mm shall be tapered in 45degree angle on either side forming styles; and 5mm thick, 95mm wide PVC sheet out of which 75mm shall be flat and 20mm shall be tapered in 45 degree on the inner side to form top and bottom rail and 115mm wide PVC sheet out of which 75mm shall be flat and 20mm shall be tapered on both sides to form lock rail. Top, bottom and lock rails shall be provided either side of the panel. 10mm (5mm x 2 ) thick, 20mm wide cross PVC sheet be provided as gap insert for top rail & bottom rail. paneling of 5mm thick both side PVC sheet to be fitted in the M.S. frame welded/ sealed to the styles & rails with 7mm (5mm+2mm) thick x 15mm wide PVC sheet beading on inner side, and joined together with solvent cement adhesive. An additional 5mm thick PVC strip of 20mm width is to be stuck on the interior side of the 'C' Channel using PVC solvent adhesive etc. complete as per Manufacturer's specification including 3 nos ISI marked stainless steel hinges of size 100x58x1.9 mm complete. (for W.C. and bathroom door shutter). | | - |
| 8.152.1 | PVC door shutter | sqm | 2,069.64 |
| 8.152.2 | Both side Pre-laminated panel PVC door shutter | sqm | 2,528.57 |
| 8.153 | Providing and fixing 30 mm thick Glass Fibre Reinforced Plastic (FRP) paneled door shutter of required colour and approved brand and manufacture, made with fire - retardant grade unsaturated polyester resin, moulded to 3 mm thick FRP laminate for forming hollow rails and styles, with wooden frame and suitable blocks of seasoned wood inside at required places for fixing of fittings, cast monolithically with 5 thick FRP laminate for panels confirming to IS: 14856 - 2000, complete. | sqm | 1,885.71 |

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| 8.154 | Providing and fixing 30mm thick fibreglass reinforced plastic (F.R.P.) flush door shutter in different plain and wood finish made with fire retardant grade unsaturated polyester resin, moulded to 3mm thick FRP laminate all around, with suitable wooden blocks inside at required places for fixing of fittings and polyurethane foam (PUF) / Polystyrene foam to be used as filler material throughout the hollow panel, casted monolithically with testing parameters of F.R.P. laminate conforming to table - 3 of IS: 14856 : 2000, complete. | sqm | 2,316.96 |
| 8.155 | Providing and fixing factory made Pre-laminated particle board flat pressed three layer or graded wood particle board shutter (25 mm thick) with one side decorative finish and other side balancing lamination conforming to IS: 12823 Grade l Type ll, of approved design, and edges sealed with water resistant paint and lipped with aluminium 'U' type edge beading all-round the shutter, including fixing with angle cleat, grip strip, cadmium plated steel screws including fixing of stainless steel hinges 100x1.7mm etc complete as per direction of Engineer-in-Charge | sqm | 3,109.82 |
| 8.156 | Providing and fixing cupboard shutters 25mm thick, with Pre-laminated flat pressed with decorative lamination one side and other side balancing lamination exterior Grade - I MDF Board 25mm thick confirming to IS:14587 including IInd class teak wood lipping of 25mm wide x12 mm thick with necessary screws and bright finished stainless steel piano hinges complete as per direction of the Engineer-in-Charge. | sqm | 1,597.32 |
| 8.157 | Providing and fixing aluminum U beading of required size to Pre-laminated /flush door shutter including fixing etc. complete as per direction of Engineer-in-charge. | kg | 455.36 |
| 8.158 | Providing and fixing IS: 3564 marked aluminium die cast body tubular type universal hydraulic door closer with necessary accessories and screws etc complete. | each | 1,294.64 |
| 8.159 | Providing and fixing IS: 3564 marked aluminium extruded section body tubular type universal hydraulic door closer with double speed adjustment with necessary accessories and screws etc complete. | each | 940.18 |
| 8.160 | Providing and fixing expandable fasteners of specified size with necessary plastic sleeves and galvanized M.S screws including drilling holes in masonry work /CC/ R.C.C by drilling machine and making good etc complete. | | - |
| 8.160.1 | 25 mm long | each | 13.39 |
| 8.160.2 | 32 mm long | each | 18.75 |
| 8.160.3 | 40 mm long | each | 24.55 |
| 8.160.4 | 50 mm long | each | 26.79 |
| 8.161 | Supplying and fixing teak wood fillets (10 mm x 10 mm size) including nails etc complete. | metre | 24.11 |

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| 8.162 | Providing and fixing factory made Fibreglass Reinforced plastics (F.R.P.) chajja 4mm thick of required colour, size and design made by Resin Transfer Moulding (RTM) Machine Technology, resulting in void free compact laminate in single piece, having smooth gradual slope curvature for easy drainage of water and duly reinforced by 2nos. Vertically and 1nos. Horizontally 50x2mm thick M.S. flat with 12mm in built hole for grouting on the existing wall along with the 50mm flanges duly inserted and sealed in the wall complete in one single piece casted monolithically, including all necessary fittings . The FRP Chajja should be manufactured using unsaturated Polyester resin as per IS: 6746 duly reinforced with fibre glass chopped strand mat (CSM) as per IS: 11551 complete with protective Gel coat U/V coating on Top for complete resistance from the extreme of temperature, weather & sunlight. | sqm | 4,528.57 |
| **9** | **STEEL AND ALUMINIUM WORK** | | - |
| 9.1 | Structural steel work in single section including cutting, hoisting, fixing in position and applying a priming coat of red oxide zinc chromate primer. | kg | 54.91 |
| 9.2 | Structural steel work riveted or bolted or welded in built-up sections, trusses and frames work upto a height of 5m above plinth level, including cutting, hoisting, fixing in position and applying a priming coat of red oxide zinc chromate primer. | Kg | 58.93 |
| 9.3 | Steel work in tubular (round, square or rectangular hollow tubes etc.) structure in built-up sections, trusses and frame work including cutting, hoisting, fixing in position upto a height of 5m above plinth level, consisting of columns trusses, roof and bottom purlins, base plate, holding down bolts, wind ties bracing (if required), bolts, nuts and washers for fastening etc. complete with applying a priming coat of red oxide zinc chromate primer. | | - |
| 9.3.1 | Electric resistance or induction butt welded tubes Grade-250 | kg | 79.02 |
| 9.3.2 | Electric resistance or induction butt welded tubes Grade-300 | kg | 83.48 |
| 9.4 | Extra for curvature in making steel work in tubular structure in built-up sections, trusses and frame work | kg | 2.05 |
| 9.5 | Extra for hoisting trusses and placing in position over height above 5m for every 2.5 m height or part thereof. | kg | 2.41 |
| 9.6 | Steel work welded in built up sections/ framed work including cutting, hoisting, fixing in position and applying a priming coat of red oxide zinc chromate primer. | | - |
| 9.6.1 | In stringers, treads, landings etc. of stair cases including use of chequered plate wherever required, all complete. | Kg | 62.50 |
| 9.6.2 | In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works. | Kg | 60.71 |
| 9.7 | Providing and fixing M.S. round holding down bolts with nuts, washer and plate in cement concrete complete. | kg | 63.84 |
| 9.8 | Providing and fixing M.S. rivets of sizes in position | kg | 81.70 |
| 9.9 | Welding by gas plant. | cm | 1.88 |
| 9.10 | Welding by electric plant. | cm | 1.52 |
| 9.11 | Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2mm and braced with flat iron diagonals 20x5mm size with top and bottom rails of T-iron 40x40x6mm with 38mm steel pulleys complete with bolts, nuts, locking arrangement stoppers, handles including applying a priming coat of red oxide zinc chromate primer. | sqm | 2,973.21 |

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| 9.12 | Providing and fixing sliding shutter with M.S. sheet 1mm thick, frame and diagonal braces of 40x40x6mm angle iron, 3.0 mm thick M.S. gusset plates at junctions and corners, 25mm dia pulley, 40x40x6mm angle and T-iron guide at top and bottom respectively including applying a priming coat of red oxide zinc chromate primer. | kg | 63.84 |
| 9.13 | Providing and fixing steel door/ window with M.S. sheet 1mm thick, frame of angle iron, diagonal braces of angle/ flat iron of suitable size, 3.00 mm M.S. gusset plates at junctions and corners, all necessary fittings complete including applying a priming coat of red oxide zinc chromate primer. | kg | 66.96 |
| 9.14 | Providing and fixing steel door made of angle iron of suitable sizes with M.S. grill of approved pattern made of M.S. flats or square or round bars coat of red oxide zinc chromate primer. | kg | 70.98 |
| 9.15 | Providing and fixing M.S. grill of approved pattern made of M.S. flats or square or round bars welded to steel frame of windows etc. including applying a priming coat welded to frame with all necessary fitting complete including applying a priming of red oxide zinc chromate primer. | kg | 60.27 |
| 9.16 | Providing and fixing M.S. frames of doors, windows, ventilators and cupboards joints mitred and welded with 15x3 mm lugs 10cm long embedded in cement concrete blocks 15x10x10cm of grade M-10 or with wooden plugs and screws or with dash fastener or rawl plugs and screws or with fixing clips or with bolts and nuts as required including fixing of necessary butt hinges and screws and applying a priming coat of approved steel primer. | | - |
| 9.16.1 | "T" –iron frames | kg | 66.07 |
| 9.16.2 | Angle-iron frames | kg | 65.63 |
| 9.16.3 | MS tubular frames | kg | 71.88 |
| 9.17 | Providing and fixing factory made ISI marks steel doors, windows and ventilators side/ top/ centre hung made up of standard rolled steel section conforming to IS 1038:1968 (viz. F7D, F4B, K11 and K12B etc.), joints mitred and flash butt and sash bars tenoned and riveted/ welded with 10 cm long lugs of size 15x3mm embedded in cement concrete block 15x10x10 cms of 1:3:6 (1 cement :3 Coarse sand: 6 graded stone aggregate 20 mm nominal size) or rawl plugs and screws or with bolts and nuts as required including providing and fixing of hinges, pivots, handles, pegs, stays, rolling devices, locking arrangements, spring catch etc., as required complete including applying a priming coat of red oxide zinc chromate primer. | kg | 78.57 |
| 9.18 | Providing and fixing in position doors, windows and ventilators frames made of cold rolled pressed steel sheet framed profiles made from commercial M.S. Sheets conforming to I.S. 513 of 1973 and as per general specifications of I.S 4351 including hinges jamb, lock jamb, steel butt hinges, base tie, joints mitred and welded with 10cm long legs of size 15x3mm M.S. flat, embedded in cement concrete blocks 15x10x10cm size of grade M-10 or rawl plugs and screws or with fixing clips or with bolts and nuts including neatly compacted filling M-10 cement concrete in profile section applying a priming coat of red oxide zinc chromate primer. | | - |
| 9.18.1 | Single rebate/ mullion 80mmx50mm size, 1.25mm thick sheet | metre | 322.32 |
| 9.18.2 | Single rebate/ mullion 80mmx50mm size, 1.6mm thick sheet | metre | 388.39 |
| 9.18.3 | Single rebate/ mullion 100mmx50mm size, 1.25mm thick sheet. | metre | 349.11 |
| 9.18.4 | Single rebate/ mullion 100mmx50mm size, 1.6mm thick sheet. | metre | 423.21 |
| 9.18.5 | Double rebate 115mmx50mm size, 1.6mm thick sheet | metre | 471.43 |

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| 9.19 | Providing and fixing in position door shutter made of square/ rectangular hollow steel tube of approved size joint mitred, welded frame with two Nos. intermediate rails, 200mm wide lock rail made of 1.6mm thick M.S. sheet welded to intermediate rail, M.S. grill of approved pattern made of M.S. flat or square or round bars welded to frames and provided M.S. butt hinges, all necessary fitting and finished by filling putty including applying a priming coat of red oxide zinc chromate primer all complete. (To be used in safety door shutters in buildings) | kg | 83.48 |
| 9.20 | Fixing standard steel doors, windows, and ventilators in walls with 10 cm long lugs of size 15x3mm embedded in cement concrete block 15x10x10cm size 1:3:6 (1 Cement : 3 Sand : 6 Stone aggregate 20 nominal size) or rawl plugs and screws or with bolts and nuts as required (steel windows with lugs shall be supplied by department). | sqm | 8.93 |
| 9.21 | Providing and fixing float glass panes with steel glazing clips and special metal sash putty of approved make in steel doors, windows, ventilators: | | - |
| 9.21.1 | 4mm thick | sqm | 477.68 |
| 9.21.2 | 5mm thick | sqm | 563.39 |
| 9.21.3 | 6mm thick | sqm | 649.11 |
| 9.22 | Providing and fixing 3 mm fibre glass pane with steel glazing clips and special metal sash putty of approved make in steel doors, windows, ventilators. | sqm | 605.36 |
| 9.23 | Providing and fixing frosted glass panes with steel glazing clips and special metal sash putty of approved make in steel doors, windows, ventilators: | | - |
| 9.23.1 | 4 mm thick | sqm | 539.29 |
| 9.23.2 | 5 mm thick | sqm | 640.18 |
| 9.23.3 | 6 mm thick | sqm | 777.68 |
| 9.24 | Providing and fixing tinted glass panes with steel glazing clips and special metal sash putty of approved make in steel doors, windows, ventilators: | | - |
| 9.24.1 | 4 mm thick | sqm | 573.21 |
| 9.24.2 | 5 mm thick | sqm | 683.04 |
| 9.24.3 | 6 mm thick | sqm | 824.11 |
| 9.25 | Providing and fixing sun glass film over glazed doors windows & ventilators etc. complete | sqm | 282.14 |
| 9.26 | Extra for providing and fixing mild steel beading of size 15x3mm with screws instead of glazing clips and metal sash putty in steel doors, windows, ventilators and composite units. | metre | 28.13 |
| 9.27 | Supplying and fixing rolling shutter of approved makes made of M.S. laths interlocked together through their entire length and jointed together at the end by end locks, mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and out side locking with push and pull arrangement complete but excluding the cost of top cover and spring. | | - |
| 9.27.1 | 80x1.25mm M.S. Laths | sqm | 1,509.82 |
| 9.27.2 | 80x1.20mm M.S. Laths | sqm | 1,401.79 |
| 9.27.3 | 80x0.90mm M.S. Laths | sqm | 1,325.89 |
| 9.28 | Providing and fixing 27.5cm long wire spring for rolling shutters. | each | 323.21 |
| 9.29 | Providing and fixing M.S. sheet top cover for rolling shutter | | - |
| 9.29.1 | 1.25mm thick | sqm | 482.14 |
| 9.29.2 | 1.20mm thick | sqm | 473.21 |
| 9.29.3 | 0.90mm thick | sqm | 356.25 |
| 9.30 | Providing and fixing ball bearing for rolling shutters. | each | 377.68 |

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| 9.31 | Providing and fixing mechanical device chain and crank operation for operating rolling shutters. | set | 5,064.29 |
| 9.32 | Extra for providing grilled rolling shutter manufactured out of 8 mm dia. M.S. bar instead of laths as per approved design (area of grill provided, only to be measured). | sqm | 291.96 |
| 9.33 | Providing and fixing GI wire gauge of average width of aperture 1.56mm with wire of 0.45mm to existing steel door, window shutter frames with necessary M.S. strip beading etc. complete. | sqm | 508.04 |
| 9.34 | Providing and fixing stainless wire gauge of average width of aperture 1.56mm with wire of 0.35mm to existing steel door, window shutter frames with necessary M.S. strip beading etc. complete. | sqm | 706.25 |
| 9.35 | Providing and fixing approved pipe hand rail by welding to iron railing including applying a priming coat of red oxide zinc chromate primer. | | - |
| 9.35.1 | M.S Pipe | kg | 71.88 |
| 9.35.2 | E.R.W. pipe | kg | 80.36 |
| 9.35.3 | G.I. pipe | kg | 83.04 |
| 9.36 | Providing and fixing approved pipe hand rail to walls (ramps, stair cases) including cutting chases and repairing the same to original condition, applying a priming coat of red oxide zinc chromate primer. | | - |
| 9.36.1 | M.S Pipe | kg | 63.39 |
| 9.36.2 | E.R.W. pipe | kg | 70.54 |
| 9.36.3 | G.I. pipe | kg | 75.45 |
| 9.37 | Providing and fixing M.S. fan clamp/hook for ceiling fan made out of 16 mm dia M.S. bar bent to shape with hooked ends in R.C.C. slabs, beams during laying including painting the exposed portion of loop. | each | 86.61 |
| 9.38 | Providing and fixing broken glass 100 mm high in spacing not more than 40 mm both ways and laid in 50 mm thick (average) cement mortar 1:4 (1 cement : 4 coarse sand ) over compound walls, prapet walls and the like. | sqm | 239.29 |
| 9.39 | Providing and fixing in position G.I. barbed wire (93.8gram/m) to concrete/ wooden/ angle iron posts (straight or diagonal) including securing and screwing with G.I. tying wire, G.I. stapples, G.I.U-nails or steel pins etc., complete(Cost of posts, struts to be paid for separately) | metre | 8.39 |
| 9.40 | Providing and fixing concertina coil fencing with required dia 610 mm (having 50 nos. round per 6 metre length) up to 3m height of wall with existing angle iron 'Y' shaped placed 2.4 m or 3.00 m apart tied with G.I. staples and G.I. clips to retain horizontal including necessary bolts or G.I. barbed wire tied to angle iron all complete as per direction of Engineer-in-charge with reinforced barbed tape (R.B.T.) / Spring core (2.5mm thick) wire of high tensile strength of 165 kg/ sq.mm with tape (0.52 mm thick) and weight 43.478gm/ metre (cost of M.S. angle, C.C. blocks shall be paid separately) | metre | 146.43 |
| 9.41 | Providing and fixing concertina fencing with reinforced barbed tape (R.B.T.) up to 3m height of wall with existing angle iron in any shape in one or more rows in horizontal/ vertical/inclined alignment tied with G.I. staples and G.I. clips including necessary bolts or G.I. barbed wire tied to angle iron all complete as per direction of Engineer-in-charge with reinforced barbed tape (R.B.T.) / Spring core (2.5mm thick) wire of high tensile strength of 165 kg/ sq.mm with tape (0.52 mm thick) and weight 43.478gm/ metre (cost of M.S. angle, C.C. blocks shall be paid separately)(RBT tape to be measured for each row) | metre | 12.50 |

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| 9.42 | Providing and fixing in position welded steel wire fabric to concrete/ wooden/ angle iron posts including securing and screwing with G.I. tying wire, G.I. staples, G.I.U-nails or steel pins etc., complete | | - |
| 9.42.1 | Aperture 75x25mm | sqm | 491.96 |
| 9.42.2 | Aperture 50x25mm | sqm | 508.04 |
| 9.42.3 | Aperture 50x50mm | sqm | 477.68 |
| 9.42.4 | Aperture 75x75mm | sqm | 446.43 |
| 9.42.5 | Aperture 100x100mm | sqm | 400.00 |
| 9.43 | Providing and fixing in position chain linked steel wire fabric made of 4 mm dia G.I. wire of required width in mesh to concrete/ wooden/ angle iron posts including securing and screwing with 2mm dia G.I. wire, G.I. staples, G.I.U-nails or steel pins etc., complete. | | - |
| 9.43.1 | Aperture 50x50mm | sqm | 295.54 |
| 9.43.2 | Aperture 75x75mm | sqm | 259.82 |
| 9.44 | Providing and fixing "NETLON insect screens" with 25mm wide Hook and loop tape all around to wooden/ aluminium/ steel windows, ventilators and the like complete. | Sqm | 248.21 |
| 9.45 | Providing and placing in position angle iron post and strut of required size including bottom to be split and bent at right angle in opposite direction for required length and drilling holes upto 10 mm dia as per requirement including priming coat with red oxide zinc chromate primer and placing the post/ strut in cement concrete block. | Kg | 62.05 |
| 9.46 | Extra for powder coating (minimum 50 micron) on steel sections instead of red oxide zinc chromate primer | kg | 21.88 |
| 9.47 | Providing and fixing aluminium work for doors, windows, ventilators and partitions made out of extruded aluminium standard sections (main section with minimum 1.5mm thickness) conforming to IS: 733, IS: 1285 mitred and jointed mechanically including aluminium cleats, neoprene weather stripping gasket beveled edge beading, screws duly fixed in wall/ floor with fixing clips or hold fasteners or bolts and nuts as required aluminium sections shall be anodized transparent or dyed to approved shade according to IS: 1868, minimum anodic coating shall be of grade AC-15. (Glazing to be paid for separately: | | 21.88 |
| 9.47.1 | For fixed portion | kg | 295.54 |
| 9.47.2 | For shutter of doors, windows & ventilators including providing and making provision for fixing of fitting wherever required including the cost of PVC/ neoprene gasket required (Fittings shall be paid for separately). | Kg | 301.79 |
| 9.48 | Extra for powder coated (minimum 50 micron) aluminium sections instead of anodized. | Kg | 24.11 |
| 9.49 | Extra for polyester powder coated (minimum 50 micron) aluminium sections instead of anodized. | Kg | 30.80 |
| 9.50 | Providing and fixing 12mm thick pre-laminated particle board flat pressed with decorative lamination and balancing lamination on specified sides exterior Grade – I MDF Board 12 mm thick confirming to IS:14587, including fixed in aluminium doors, windows shutters and partition frames with C.P. brass/ stainless steel screws etc. complete. | | 30.80 |
| 9.50.1 | With decorative lamination on one side and balancing lamination on other side. | Sqm | 754.46 |
| 9.50.2 | With decorative lamination on both side | sqm | 808.93 |
| 9.51 | Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete. (Cost of aluminium snap beading shall be paid in basic item): | | - |

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| 9.51.1 | With float glass panes of 4 mm thickness | sqm | 545.54 |
| 9.51.2 | With float glass panes of 5 mm thickness | sqm | 632.14 |
| 9.51.3 | With float glass panes of 6 mm thickness | sqm | 717.86 |
| 9.51.4 | With float glass panes of 8 mm thickness | sqm | 938.39 |
| 9.52 | Providing and welding 1mm thick MS sheet on existing door/ window/ ventilator shutter frames including applying a coat of red oxide zinc cromate primer on both side.(MS strip if provided on periphery or as intermediate member shall be paid extra) | Sqm | 522.32 |
| 9.53 | Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partition etc. with 6 mm thick clear float glass both side having 12 mm air gap including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. complete. | sqm | 2,820.54 |
| 9.54 | Providing and fixing anodized aluminium framed grill (minimum anodic coating of grade AC 15)of of approved shape, pattern and design including cutting, bending, hoisting and erecting/ fixing to door, window frame or to wall with fixing clips or hold fasteners or bolts and nuts as required etc. complete. | kg | 353.57 |
| 9.55 | Providing and fixing of six/seven levers branded and approved mortise lock. | each | 530.36 |
| 9.56 | Providing and fixing of floor spring IS: marked (Everite, Door link or any equivalent make) with stainless steel cover plate | each | 1,714.29 |
| 9.57 | Providing stainless steel railing/ grill made of S.S. flats, hollow S.S. pipe or square/ rectangular sections of approved design fixing in stair case, balcony or other places with metal fasteners and stainless steel bolts etc complete. | | - |
| 9.57.1 | SS Grade 204 | kg | 416.96 |
| 9.57.2 | SS Grade 304 | kg | 468.75 |
| 9.58 | Extra for providing and fixing tinted glass panes in aluminium door, window, ventilator shutters and partitions instead of float glass. | | - |
| 9.58.1 | 4 mm thickness | sqm | 95.54 |
| 9.58.2 | 5 mm thickness | sqm | 119.64 |
| 9.58.3 | 6 mm thickness | sqm | 175.00 |
| 9.58.4 | 8 mm thickness | sqm | 183.93 |
| 9.59 | Extra for providing and fixing reflective glass panes in aluminium door, window, ventilator shutters and partitions instead of float glass. | | - |
| 9.59.1 | 4 mm thickness | sqm | 275.89 |
| 9.59.2 | 5 mm thickness | sqm | 260.71 |
| 9.59.3 | 6 mm thickness | sqm | 315.18 |
| 9.59.4 | 8 mm thickness | sqm | 485.71 |
| 9.60 | Designing, providing and fixing aluminium frame work made of special aluminium section on building face with M.S. angle iron brackets fixed on RCC structure with S.S. hold fasteners, including providing and fixing two sided structural adhesive tape of appropriate grade (NORTON or equivalent), on aluminium sections for fixing aluminium/ glass panel, sealing on periphery of frame work, by providing EPDM gasket, silicon weather sealant between aluminium frame and building structure including hire charges of double scaffolding complete. | kg | 318.75 |
| 9.61 | Providing and fixing aluminium composite panels in approved panel sizes, thickness and shape on aluminium frame work on face of building. (Frame to be paid separately) | | - |
| 9.61.1 | 3mm thick | sqm | 1,145.54 |
| 9.61.2 | 4mm thick | sqm | 1,558.04 |

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| 9.62 | Providing and fixing laminated glass sheet of 8.76mm thickness in approved sizes on aluminium frame work on face of building. (Frame to be paid for separately). | sqm | 2,333.04 |
| **10** | **ROOFING AND CEILING** | | - |
| 10.1 | Providing corrugated G.I. sheet roofing including vertical/ curved surfaces fixed with galvanized iron, J or L hooks, bolts and nuts 8mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead including painting with primer and paint on overlapping of sheets complete excluding the cost of purlins rafters and trusses. (Zinc coating not less than 272 gms/sqm) | | - |
| 10.1.1 | 1.00 mm thick sheet (weight 8.60 kg/m2) | sqm | 860.71 |
| 10.1.2 | 0.80 mm thick sheet (weight 7.03 kg/m2) | sqm | 723.21 |
| 10.1.3 | 0.63 mm thick sheet (weight 5.70 kg/m2) | sqm | 605.36 |
| 10.1.4 | 0.5 mm thick sheet (weight 4.30 kg/m2) | sqm | 482.14 |
| 10.2 | Extra for straight cutting in C.G.I. sheet roofing for making opening of area exceeding 0.40 sqm for chimney stacks, sky light etc. | | - |
| 10.2.1 | 1.00 mm thick sheet | sqm | 20.54 |
| 10.2.2 | 0.80 mm thick sheet | sqm | 19.20 |
| 10.2.3 | 0.63 mm thick sheet | sqm | 16.52 |
| 10.2.4 | 0.50 mm thick sheet | sqm | 13.84 |
| 10.3 | Extra for racking or circular cutting in C.G.I. sheets roofing: | | - |
| 10.3.1 | 1.00 mm thick sheet | sqm | 123.21 |
| 10.3.2 | 0.80 mm thick sheet | sqm | 121.43 |
| 10.3.3 | 0.63 mm thick sheet | sqm | 119.64 |
| 10.3.4 | 0.50 mm thick sheet | sqm | 96.43 |
| 10.4 | Extra for making opening or recesses in C.G.I. sheets roofing of girth not more than 1 metre. | | - |
| 10.4.1 | Upto 100 sq.cm | each | 23.66 |
| 10.4.2 | Above 100 sq.cm. upto 400 sq.cm | each | 41.52 |
| 10.4.3 | Above 400 sq.cm. in area | each | 66.07 |
| 10.5 | Providing ridges or hips of 60cm overall width in plain G.I. sheet fixed with galvanized washers J or L hooks, bolts and nuts 8mm G.I. limpet and bitumen washers complete. | | - |
| 10.5.1 | 1.00 mm thick sheet with zinc coating not less than 275gm/sqm | metre | 532.14 |
| 10.5.2 | 0.80 mm thick sheet with zinc coating not less than 275 gm/sqm | metre | 475.89 |
| 10.5.3 | 0.63 mm thick sheet with zinc coating not less than 275gm/sqm | metre | 397.32 |
| 10.5.4 | 0.50 mm thick sheet with zinc coating not less than 275 gm/sqm | sqm | 339.29 |
| 10.6 | Providing valley of 90cm overall width in plain G.I. sheet 1.6 mm thick with zinc coating not less than 350gm/sqm fixed with galvanized iron J or L hooks, bolts and nuts 8 mm dia G.I. limpet and bitumen washers complete. | metre | 940.18 |
| 10.7 | Providing and flashing 38cm. over all width in plain G.I. sheet fixed, with galvanized iron J or L hooks bolts and nuts G.I. limpet washers and fixed in walls with cement mortar 1:3 (1 cement: 3 sand) | | - |
| 10.7.1 | G.I. plain sheet 1.25mm thick (weight 10.56 kg/m2) | metre | 375.00 |
| 10.7.2 | G.I. plain sheet 1.00 mm thick (weight 8.60 kg/m2) | metre | 334.82 |
| 10.8 | Providing and fixing flat iron brackets with bolts and nuts for holding G.I. sheet/ A.C. gutters.15 cm wide and 45 cm to 60cm over all semi circular portion. | | - |
| 10.8.1 | 40x3mm | each | 64.73 |
| 10.8.2 | 50x3 mm | each | 75.00 |

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| 10.9 | Providing and fixing 15 cm. wide 45cm. overall semi circular plain G.I. sheet gutter with iron brackets 40x3 mm size, bolts, nuts and washers etc. including making necessary connections with rain water pipe complete as per designs. | | - |
| 10.9.1 | 0.80 mm thick sheet | metre | 378.57 |
| 10.9.2 | 0.63 mm thick sheet | metre | 340.18 |
| 10.10 | Extra for providing and fixing wind ties of 40x6mm flat iron section. | metre | 105.36 |
| 10.11 | Supply and fixing of precoated galvanized iron profile sheets (size, shape and pitch of corrugation as approved by Engineer-in-charge) 0.50 mm +/- 5% total coated thickness (TCT), Zinc coating 120gsm as per IS: 277 in 240mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns. Sheet should have protective guard film of 25 microns minimum to avoid scratches while transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55mm) with EPDM seal or with polymer coated J or L hooks, bolts and nuts 8mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead complete upto any pitch in horizontal/ vertical or curved surfaces excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. | sqm | 567.86 |
| 10.12 | Supply and fixing of polymer precoated galvalume profile sheets (PPGL) of approved size, shape and pitch of corrugation, total coated thickness (TCT) 0.60 mm +/- 5%, epoxy primer on both side of the sheet and colour polyester top coat 18-20 microns and 6-7 microns on bottom. Sheet should have protective guard film of 25 microns minimum to avoid scratches while transportation and should be supplied in single length upto 12 metre or as desired by Engineer-in-charge. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55mm) with EPDM seal or with polymer coated J or L hooks, bolts and nuts 8mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead complete upto any pitch in horizontal/ vertical or curved surfaces excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. | sqm | 618.75 |
| 10.13 | Supply and fixing of precoated TILE PATTERN profile sheets of approved make, colour, over all size, corrugation shape and pitch, having total coated thickness (TCT) 0.45 mm (approx weight 4.9 kg/sqm) with Zn-Al coating and superior paint and having yeild strength of 550 MPa. Sheet should have protective guard film of 25 microns minimum to avoid scratches while transportation. The sheet shall be fixed using self drilling /self tapping screws of size (5.5x 55mm) with EPDM seal or with polymer coated J or L hooks, bolts and nuts 8mm diameter with bitumen and G.I. limpet washers or with G.I. limpet washers filled with white lead complete upto any pitch excluding the cost of purlins, rafters and trusses and including cutting to size and shape wherever required. | sqm | 841.07 |
| 10.14 | Providing and fixing 2mm thick semi transparent polycarbonate profile roofing sheet of approved make and colour to make any normal roofing / covering and fixing as per manufacture specification at spacing not more than 1.2 m centre to centre with EPDM gasket and silicon sealant fixed with self drilling stainless steel screws all complete as per direction of Engineer-in-Charge. | sqm | 1,696.43 |
| 10.15 | Extra for working height above 6 metre for fixing GI/ profile/ PVC/ polycarbonate sheet for every additional height of 1 metre of part thereof. | sqm | 4.20 |

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| 10.16 | Providing and fixing precoated galvanised steel sheet roofing accessories 0.50 mm +/- 5% total coated thickness (TCT), Zinc coating 120gsm as per IS: 277 in 240mpa steel grade, 5-7 microns epoxy primer on both side of the sheet and polyester top coat 15-18 microns using self drilling/ self tapping screws or with polymer coated J or L hooks, bolts and nuts and or G.I. seam bolts and nuts, G.I. plain and bitumen washers complete : | | - |
| 10.16.1 | Ridges plain (500-600mm) | metre | 492.86 |
| 10.16.2 | Flashings/ Aprons. (Upto 600 mm) | metre | 481.25 |
| 10.16.3 | North light curves. | metre | 514.29 |
| 10.16.4 | Barge board (Upto 300 mm) | metre | 433.93 |
| 10.16.5 | Crimp curve | metre | 557.14 |
| 10.16.6 | Gutter. (600 mm over all girth). | metre | 561.61 |
| 10.17 | Providing asbestos cement 6mm thick corrugated or semi corrugated sheets roofing fixed with galvanized J or L hooks, bolts and nuts 8mm dia G.I. plain bitumen washers complete excluding the cost of purlins, rafters and trusses. | sqm | 309.82 |
| 10.18 | Extra for asbestos cement corrugated/semi corrugated sheet roofing with vertical sheeting or sheeting to pitch exceeding 60 degree. | sqm | 45.54 |
| 10.19 | Extra for straight cutting in asbestos cement corrugated/ semi corrugated sheet roofing for making opening of area exceeding 0.40 sqm. for chimney stacks, sky light etc. | metre | 39.29 |
| 10.20 | Extra for racking or circular cutting in A.C. corrugated/ semi corrugated sheet roofing. | metre | 51.34 |
| 10.21 | Extra for making opening or recesses in asbestos cement corrugated/ semi corrugated sheet roofing of girth not more than 1 metre: | | - |
| 10.21.1 | Not exceeding 100 sq.cm. in area | each | 34.82 |
| 10.21.2 | Exceeding 100 sq.cm but not exceeding 400 sq.cm in area | each | 58.48 |
| 10.21.3 | Exceeding 400 sq.cm. in area | each | 83.04 |
| 10.22 | Providing and fixing ridges and hips in asbestos cement sheet roofing with G.I., J or hooks, bolts and nuts 8 mm dia, G.I plain and bitumen washers complete. | | - |
| 10.22.1 | Plain angular ridges | metre | 48.66 |
| 10.22.2 | Serrated or plain wing adjustable ridges | metre | 58.48 |
| 10.23 | Providing and fixing asbestos cement roofing accessories with galvanized iron J or L hooks, bolts and nuts and/or G.I. seam bolts & nuts, G.I. plain & bitumen washers etc. complete. | | - |
| 10.23.1 | Apron flashing pieces | metre | 65.18 |
| 10.23.2 | Eaves filler pieces | metre | 88.84 |
| 10.23.3 | North light and ventilator curves | metre | 94.64 |
| 10.23.4 | Barge boards | metre | 61.16 |
| 10.23.5 | Ridge finials | pair | 108.93 |

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| 10.24 | Providing & fixing UV stabilized fibreglass reinforced plastic (FRP) sheet roofing upto any pitch including fixing with polymer coated 'J' or 'L' hooks, bolts & nuts 8mm dia. G.I plain/bitumen washers complete but excluding the cost of purlins, rafters, trusses etc. The sheets shall be manufactured out of 2400 TEX panel rovings incorporating minimum 0.3% Ultra-violet stabiliser in resin system under approximately 2400 psi and hot cured. They shall be of uniform pigmentation and thickness without air pockets and shall conform to IS 10192 and IS 12866.The sheets shall be opaque or translucent, clear or pigmented, textured or smooth as specified. | | - |
| 10.24.1 | 2mm thick corrugated (2.5" or 4.2" or 6") or step-down (2"or 3"or 6") as specified. | sqm | 683.93 |
| 10.24.2 | 2 mm thick flat | sqm | 629.46 |
| 10.25 | Providing and fixing corrugated fibre glass sheet roofing in any shade/ colour fixed with G.I. 'J' hooks, bolts, nuts and washers etc. complete but excluding cost of purlins, rafters, trusses etc. with: | | - |
| 10.25.1 | 1.50mm thick fibre glass sheet | sqm | 432.14 |
| 10.25.2 | 2.00mm thick fibre glass sheet | sqm | 544.64 |
| 10.25.3 | 3.00mm thick fibre glass sheet | sqm | 784.82 |
| 10.26 | Providing and fixing plain fibre glass sheet roofing in any shade/ colour fixed with G.I. 'J' hooks, bolts, nuts and washers etc. complete but excluding cost of purlins, rafters, trusses etc. with: | | - |
| 10.26.1 | 1.50mm thick fibre glass sheet | sqm | 396.43 |
| 10.26.2 | 2.00mm thick fibre glass sheet | sqm | 502.68 |
| 10.26.3 | 3.00mm thick fibre glass sheet | sqm | 714.29 |
| 10.27 | Providing and fixing plain sheets ceiling with nails to the frame work for panels excluding frame work. | | - |
| 10.27.1 | 4 mm thick A.C. plain sheets | sqm | 277.68 |
| 10.27.2 | 6 mm thick A.C. plain sheets | sqm | 311.61 |
| 10.28 | Providing and fixing semi transparent polycarbonate compact sheet roofing of approved colour to make any normal shape of roofing / covering of any pitch and fixing with specially designed powder coated aluminium section with 60mm wide flange of standard design weighing not less than 1.1 kg/ m at spacing not more than 1.2 m centre to centre with EPDM gasket and silicon sealant on all four edges of aluminium section fixed with self drilling stainless steel screws all complete including aluminium edge angle 40 mm x 40 mm x3mm as per manufacture specification and as per direction of Engineer-in-Charge. | | - |
| 10.28.1 | 6 mm thick twin wall | sqm | 1,245.54 |
| 10.28.2 | 10 mm thick twin wall | sqm | 1,583.93 |
| 10.28.3 | 10 mm thick triple wall | sqm | 1,752.68 |
| 10.29 | Providing and fixing 20mm thick wooden planks ceiling (frame work for base to be paid separately) with M.S. screws. | | - |
| 10.29.1 | With teak wood. | sqm | 1,917.86 |
| 10.29.2 | With other than teak wood (Sal, bija, Haldu) | sqm | 1,116.96 |

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| 10.30 | Providing and fixing 12 mm thick insulating board ceiling of approved quality with necessary nails etc., complete (Frame work to be paid separately). | | - |
| 10.30.1 | Natural colour insulating board | sqm | 111.61 |
| 10.30.2 | White face insulating board | sqm | 376.79 |
| 10.30.3 | Flame retardant face insulating board | sqm | 340.18 |
| 10.31 | Providing and fixing 18mm thick insulating board ceiling of approved quality with necessary nails etc., complete (Frame work to be paid separately). | | - |
| 10.31.1 | Natural colour insulating board | sqm | 359.82 |
| 10.31.2 | White face insulating board | sqm | 435.71 |
| 10.31.3 | Flame retardant face insulating board | sqm | 399.11 |
| 10.32 | Providing and fixing 3 mm thick hard board sheet ceiling of approved quality with necessary nails etc., complete (Frame work to be paid separately). | | - |
| 10.32.1 | Standard Quality Board. | sqm | 216.07 |
| 10.32.2 | Design boards. | sqm | 271.43 |
| 10.33 | Providing and fixing 4.5mm thick hard board sheet ceiling of approved quality with necessary nails etc., complete (Frame work to be paid separately). | | - |
| 10.33.1 | Standard Quality Board. | sqm | 236.61 |
| 10.33.2 | Design boards. | sqm | 307.14 |
| 10.34 | Extra for circular cutting in ceiling with. | | - |
| 10.34.1 | Teak wood planks 20 mm thick | metre | 25.45 |
| 10.34.2 | Other than teak wood (Sal, Bija, Haldu) | metre | 29.46 |
| 10.34.3 | Insulating board 12 mm thick | metre | 17.86 |
| 10.34.4 | Insulating board 18 mm thick | metre | 21.43 |
| 10.34.5 | Hard board 3 mm thick | metre | 11.61 |
| 10.34.6 | Hard board 4.5 mm thick | metre | 13.84 |
| 10.35 | Providing and fixing square edges wooden beading 65x12mm section with screws of approved quality for ceiling. | | - |
| 10.35.1 | With teak wood | metre | 100.00 |
| 10.35.2 | With other than teak wood (Sal, Bija, Haldu) | metre | 66.96 |
| 10.36 | Extra for making chamfered edges of beading. | metre | 5.36 |
| 10.37 | Extra for providing and fixing ceiling to curved surface in narrow width | sqm | 81.70 |
| 10.38 | Providing and laying split (half cut) 25mm dia bamboo jaffree 150mm mesh including tying to the purlins and rafters with moonj ban or string complete. | sqm | 120.54 |
| 10.39 | Providing and laying non-modular brick tiles of class designation 3.5 over mumty roofs grouted with cement mortar 1:3 (1 cement : 3 fine sand) mixed with 2% of integral water proofing compound by weight of cement, over a 12 mm layer of cement mortar 1:3 (1 cement : 3 fine sand) and finished neat . | sqm | 222.32 |

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| 10.40 | Painting top of roofs with bitumen of approved quality @ 17kg/10Sqm, including cleaning the slab surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil complete. | sqm | 84.38 |
| 10.41 | Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10mm and down grade) including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design : | metre | 60.71 |
| 10.42 | Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C. sheet 1mx1mx650 micron thick (0.65mm), finished with 12mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement rounding the edge sand making and finishing the outlet complete. | each | 183.04 |
| 10.43 | Providing and laying single wheel tilling without batten. | sqm | 304.46 |
| 10.44 | Providing and laying single wheel tiling over and including half split (splitted into 2 pieces) bamboo batten 50 to 70 mm at a distance of 200mm both side. | sqm | 772.32 |
| 10.45 | Providing and laying single wheel tiling over and including whole bamboo batten 50 to 70 mm at a distance of 200mm both side. | sqm | 890.18 |
| 10.46 | Providing and laying Manglore pattern tiles 20 mm thick (without hip or ridge tiles) on steel/ wooden frame (frame work to be paid separately) | sqm | 528.57 |
| 10.47 | Providing and laying Manglore pattern hips and ridge tiles fixed in cement mortar 1:6 etc. complete | metre | 116.07 |
| 10.48 | Providing and fixing Terracota tiles of approved design and size over and including 20mm thick cement plaster 1:3 including floating coat of cement slurry on bed and filling joints with neat cement slurry mixed with pigment to match the shade of tiles complete. | sqm | 469.64 |
| 10.49 | Providing and fixing ISI Marked designer tiles of approved design and size confirming to IS: 13801 over and including 20mm thick cement plaster 1:3 including floating coat of cement slurry on bed and filling joints with neat cement slurry mixed with pigment to match the shade of tiles complete. | sqm | 894.64 |
| 10.50 | Providing and fixing 100 mm diameter and 60 cm long stone ware rain water spout in cement mortar 1:4 (1 cement : 4 fine sand) | each | 54.91 |
| 10.51 | Providing and fixing to the inlet mouth of rain water pipe cast iron grating 150mm diameter and weighing not less than 440 grams. | each | 50.89 |
| 10.52 | Providing and fixing false ceiling on existing frame work with ceiling tiles. | | - |
| 10.52.1 | 12mm thick unveneered Nova teak or equivalent super plain tiles | sqm | 446.43 |
| 10.52.2 | 12 mm thick half random perorated tiles Perforated area 5% | sqm | 394.64 |
| 10.52.3 | 12 mm thick half random perorated tiles perforated area 13% | sqm | 427.68 |
| 10.52.4 | 12.5 mm thick Glass fibre reinforced Gypsum board. | sqm | 265.18 |
| 10.53 | Providing 10mm thick plaster of paris (Gypsum anhydrous) ceiling height of 5m. above floor level over strips (Sal, Bija, Haldu) 25x6mm with 10mm gap in between and reinforced with rabbit wire mesh fixed into wooden frame (Frame work to be paid separately) | | - |
| 10.53.1 | Flat surface | sqm | 758.04 |
| 10.53.2 | Curved surface | sqm | 799.11 |
| 10.54 | Extra for sunk or raised mouldings in the Gypsum board/ plaster of paris false ceiling. | sqm | 165.18 |
| 10.55 | Extra for providing plaster of paris (Gypsum and anhydrous) with ceiling above 5 m height from floor level. | sqm | 46.43 |

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| 10.56 | Providing and fixing 12mm thick plaster of paris (Gypsum Anhydrous) with ceiling upto a height of 5 M. above floor level over wooden frame and rendering smooth with plaster of paris (Frame work to be paid separately). | sqm | 170.54 |
| 10.57 | Extra for providing and fixing ceiling to curved surfaces in narrow width. | metre | 81.70 |
| 10.58 | Extra for providing 3 mm thick translucent white acrylic plastic sheets of approved quality in false ceiling instead of 12 mm thick plain/or with design particle board ceiling tiles in item above. | sqm | 408.04 |
| 10.59 | Providing and fixing steel frame work for partition wall made from steel rectangular tube of 50x25mmx1.25mm (wall thickness) with welded joints complete with grinding the welded joints. The members of the frame work along the wall/floor/ceiling shall form a grid of not more than 1100mmx1100mm centre to centre of member in any direction and are to be screwed using 75x10 mm wood screws to the prefixed wooden plugs at an interval of not more than 500mm centre to center. The vertical members to be grouted in the floor upto 50mm deep including repairing of wall/floor/ceiling with 1:3 Cement mortar. | kg | 83.93 |
| 10.60 | Providing and fixing steel grid for false ceiling made from M.S. rectangular hollow tubes of 50x25x1.25mm (wall thickness) as main runners to be jointed to cross runners of same size by electric arc welding with spacing not exceeding 610x610mm in any direction. The frame to be screwed to the wall using wooden plugs and wood screws of size 50x8mm at an interval of not more than 300mm centre to centre. The grid to be supported using 6mm M.S. hanger bars at 1200mm centre to centre both ways bent, hooked, fixed to existing R.C.C. roof with fastner or to the truss as the case may be and bolted to the grid with the help of suitable M.S. holding cleats, complete. | kg | 90.18 |
| 10.61 | Providing and fixing at all height false ceiling consisting of frame work "W" / "U" / "L" sections made of G.I. sheet with zinc coating of grade 120 consisting of angle cleats of size 25mm wide x 1.6mm thick with flanges of 22mm and 37mm at 1200mm centre to centre one flange fixed to the ceiling with dash fastener 12.5mm diax40mm long with 6mm dia bolts to the angle hangers of 25x25x0.55mm of required length, and other end of angle hanger being fixed with nut and bolts to G.I. channels 45x15x0.9mm running at the rate of 1200mm centre to centre to which the ceiling section 0.5mm thick button wedge of 80mm with tapered flanges of 26mm each having clips of 10.5mm at 450mm centre to centre shall be fixed in a direction perpendicular to G.I. channel with connecting clips made out of 2.64mm diax230mm long G.I. wire at every junction including fixing the gypsum board with ceiling section and perimeter channels 0.55mm thick 27mm high having flanges of 20mm and 30mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive-all screws @ 230mm interval including jointing and fixing to a flush finish of tapered and square edges of the board with recommended filler, jointing tapes, finisher and two coats of primer suitable for board as per manufactures specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed including providing and fixing 12.5 mm thick tapered edge gypsum board conforming to IS: 2095- Part-I all complete as per drawing and specification and direction of the Engineer in Charge but excluding the cost of painting. | sqm | 587.50 |

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| 10.62 | Providing and fixing Gypsum board wall paneling consisting of frame work "W" / "U" / "L" sections made of G.I. sheet with zinc coating of grade 120 consisting of G.I. section, 'W' profile (0.55mm thick ) having a knurled web of 51.55mm and two flanges of 26mm each with lips of 10.5 mm placed at 610mm center to center in perimeter channel having one flange of 20mm and another flange of 30mm with thickness of 0.55mm and web of length 27mm fixed on the floor and the ceiling with the nylon sleeves with fully threaded self-tapping drive all screws, and 12.5mm Gypsum board conforming to IS: 2095 - 1996: Part - I, fixed to 'W' profile with 25 mm countersunk ribbed head screws at 200mm center to center, joints of the boards are finished with specially formulated jointing compound and 48mm wide fibre tape to provide seamless finish all complete as per the drawing & directions of Engineer-in-charge. | sqm | 495.54 |
| 10.63 | Providing and fixing 97mm thick Gypsum board partition upto ceiling height consisting of frame work "W" / "U" / "L" sections made of G.I. sheet with zinc coating of grade 120, consisting of floor and ceiling channel 50mm wide having equal flanges of 32mm and 0.55mm thick fixed to the floor and ceiling at the spacing of 610mm centre to centre with dash fastener of 12.5mm diameter 40mm length and the studs 48mm wide having one flange of 34mm and other flange 36mm and 0.55mm thick fixed vertically within flanges of floor and ceiling channel and placed at a spacing of 610mm centre to centre by 6mm dia bolts and nuts at both ends of partition fixed flush to wall with rawl plugs at spacing of 450mm centre to centre and fixing of boards to either side of frame work by 25mm dry wall screws on studs, floor and ceiling channels at the spacing of 300mm centre to center and 97mm thick Gypsum board which includes one layer of tapered edge 12.5mm thick Gypsum plaster board (conforming I.S. 2095-1982) screw fixed with 25mm screws at 300mm centre to centre to either side, including jointing and finishing to a flush finish with recommended jointing compound, jointing tape, joint finisher and two coats of primer suitable for board as per manufacture's specification and Direction of Engineer-in-charge all complete. | sqm | 676.79 |
| 10.64 | Providing and fixing of aluminium panel false ceiling of approved colour consisting of panels 300mm wide x 30 mm deep x 0.7mm thick with bevel edge and length up to 6.0 metre. The panels are made from corrosion resistance aluminium alloy AA 3005 (Al. Mg) (for higher strength and good roll forming characteristics) sheet chromatised for maximum bond between metal and paint, enamel painted twice under high temperature, one side with a full primer and finish coat and the other side (inner side) with a primer coating and Skin Coat on a Continuous Paint Line.<br><br>Panel shall be fixed by clipping to panel carrier of size 41.5mm wide x 62mm deep x 0.95mm thick in standard length of upto 5 metre made of doubled baked black enamelled aluminium alloy AA 5050 (Al. Mg) with cut outs to hold the 300mm wide panels fixed at a distance of 0.3 m from wall and 2.4 m from centre to center.<br><br>Panel carrier shall be suspended by means of G.I. suspension rod 4mm dia and a Galvanised suspension spring clip at a distance of 1.7 m centre to center.<br><br>Wall trim box of size 15x30x15mm made from 0.4mm thick aluminium alloy sheet to be provided all along the wall to hold panels<br><br>(only surface area of false ceiling is to be measured and no deductions for lights, diffusers, columns etc shall be made) | | - |
| 10.64.1 | With long Plain panels | sqm | 3,933.04 |
| 10.64.2 | With long perforated panels having perforation with 2.0mm dia and 5mm center to center and pasted with non woven tissue on the back side | sqm | 4,290.18 |

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| 10.65 | Providing and fixing of aluminium tile false ceiling comprising of Tile of size 600 x 600mm x 0.7mm. The Tile ends will be raised with pips and stops to ensure positive engagement into the spring to enable for de-mounting of individual panels. The Tile sides will be sufficiently high to ensure a minimum deflection across the length of Tile. All Tiles will be bevel edged. The Tile shall be powder coated. The Tile shall be clipped into clip-in profile made of 0.5mm thick G.I sheet. The clip-in profile shall be supported from slab by means hold on clamp with clip and 4mm dia G.I. rod fixed to ceiling rigidly.<br><br>Wall trim box of size 15x30x15mm made from 0.4mm thick aluminium alloy sheet to be provided all along the wall to hold panels<br><br>(only surface area of false ceiling is to be measured and no deductions for lights, diffusers, columns etc shall be made) | | - |
| 10.65.1 | With Plain tiles | sqm | 2,556.25 |
| 10.65.2 | With perforated tiles having perforation with 2.5mm dia and 5mm center to center and pasted with non woven tissue on the back side | sqm | 3,266.96 |
| **11** | **PLASTERING AND POINTING** | | - |
| 11.1 | Providing and making 6mm thick cement plaster of mix: | | - |
| 11.1.1 | In Cement mortar 1:3 (1 cement : 3 fine sand) | sqm | 83.04 |
| 11.1.2 | In Cement mortar 1:4 (1 cement : 4 fine sand) | sqm | 77.68 |
| 11.2 | Providing and making 12mm thick cement plaster of mix: | | - |
| 11.2.1 | In cement Mortar 1:3 (1 cement : 3 fine sand) | sqm | 102.68 |
| 11.2.2 | In Cement Mortar 1:4 (1 cement : 4 fine sand) | sqm | 91.96 |
| 11.2.3 | In Cement Mortar 1:5 (1 cement : 5 fine sand) | sqm | 86.16 |
| 11.2.4 | In Cement Mortar 1:6 (1 cement : 6 fine sand) | sqm | 81.70 |
| 11.3 | Providing and making 15mm thick cement plaster on the rough side of single or half brick wall of mix: | | - |
| 11.3.1 | In cement Mortar 1:3 (1 cement : 3 fine sand) | sqm | 119.64 |
| 11.3.2 | In Cement Mortar 1:4 (1 cement : 4 fine sand) | sqm | 107.14 |
| 11.3.3 | In Cement Mortar 1:5 (1 cement : 5 fine sand) | sqm | 100.89 |
| 11.3.4 | In Cement Mortar 1:6 (1 cement : 6 fine sand) | sqm | 95.54 |
| 11.4 | Providing and making 20mm thick cement plaster on stone masonry of mix: | | - |
| 11.4.1 | In cement Mortar 1:3 (1 cement : 3 fine sand) | sqm | 146.43 |
| 11.4.2 | In Cement Mortar 1:4 (1 cement : 4 fine sand) | sqm | 129.46 |
| 11.4.3 | In Cement Mortar 1:5 (1 cement : 5 fine sand) | sqm | 121.43 |
| 11.4.4 | In Cement Mortar 1:6 (1 cement : 6 fine sand) | sqm | 113.39 |
| 11.5 | Neat Cement punning. | sqm | 29.46 |
| 11.6 | Providing and making 6mm thick cement plaster 1:3 (1 cement : 3 fine sand) finished with a floating coat of neat cement and a thick coat of lime wash on top of wall when dry for bearing of R.C.C. slab and beam. | sqm | 93.75 |
| 11.7 | Providing and making 18 mm thick cement plaster with under layer of 12mm thick cement plaster 1:5 (1 cement : 5 fine sand) finished with a top layer of 6mm thick cement plaster 1:3 (1 cement : 3 fine sand). | sqm | 145.54 |
| 11.8 | Providing and making 18mm thick cement plaster in two coats with under layer of 12mm thick plaster 1:5 (1 cement : 5 fine sand) and top layer of 6mm thick with cement plaster 1:3 (1 cement : 3 fine sand) finished rough with sponge. | sqm | 149.11 |
| 11.9 | Extra for providing and mixing water proofing materials in cement plaster work in proportion as recommended by manufacturer. | kg | 38.84 |

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| 11.10 | Providing and mixing in cement mortar, triangular polyester fiber Recron 3s (Anti-shrinkage Admixture) of 6 mm length of approved make like Reliance industries Ltd etc. in proportion as recommended by manufacturer. | kg | 326.79 |
| 11.11 | Extra for plastering of exterior walls when height exceeds 10m above ground level for every additional height of 3.0m or part thereof. | sqm | 20.09 |
| 11.12 | Extra for plastering on circular work not exceeding 6.0 meters in radius. | sqm | 7.95 |
| 11.13 | Extra for plastering done on mouldings, cornices or architraves including neat finish to line and level. | sqm | 119.64 |
| 11.14 | Providing and making 18 mm terrazzo finish plastering rubbed and polished complete with under layer of 12mm thick cement plaster 1:3 (1 cement : 3 fine sand) and top layer of 6mm thick white or black or white and black marble chips of 3mm and down size laid in proportion of 4:7 (4 cement : 7 Marble chips) by volume. | sqm | 443.75 |
| 11.15 | Extra for 18 mm terrazzo finish plastering on circular work not exceeding 6m in radius. | sqm | 24.55 |
| 11.16 | Extra for using chocolate grey or yellow marble chips instead of white/ black marble chip in top layer of terrazzo finish plaster. | sqm | 6.79 |
| 11.17 | Extra for using Baroda green marble chips instead of white/ black marble chip in top layer of terrazzo finish plaster. | sqm | 6.79 |
| 11.18 | Extra for using white cement instead of ordinary cement in top layer of terrazzo finish plaster. | sqm | 35.71 |
| 11.19 | Extra for adding red chocolate, orange or buff (Yellow) colour pigment in grey or white cement in top layer of terrazzo finish plaster. | sqm | 9.82 |
| 11.20 | Extra for adding blue or green colour pigment in grey or white cement in top layer of terrazzo finish plaster. | sqm | 7.68 |
| 11.21 | Extra for adding black colour pigment in grey or white cement in top layer of terrazzo finish plaster. | sqm | 4.20 |
| 11.22 | Providing and laying 27 mm thick washed stone grit plaster on exterior walls of height upto 10m above ground level in two layers, under layer 15mm thick plaster in cement mortar 1:4 (1 cement : 4 fine sand) furrowing the under layer with scratching tool, applying cement slurry on the under layer @ 2 Kg of cement per sqm, top layer 12mm thick cement concrete 1:1 (1 Cement: 1 Marble stone chips by weight 10mm nominal size) in panels with groove (size 1cm. x1cm) all around as per approved pattern including scrubbing and washing the top layer with brushes and water to expose the stone chippings complete (Payment for providing grooves shall be made separately). | sqm | 281.25 |
| 11.23 | Extra for providing aluminium channels of size 15mmx10mmx1.5mm in place of sunk and band panels. | metre | 59.82 |
| 11.24 | Extra for using chocolate grey or yellow marble chips instead of white/ black marble chip in top layer of grit finish plaster | sqm | 16.96 |
| 11.25 | Extra for using Baroda green marble chips instead of white/ black marble chip in top layer of grit finish plaster | sqm | 16.96 |
| 11.26 | Extra for using white cement instead of ordinary cement in top layer of grit finish plaster. | sqm | 88.84 |
| 11.27 | Extra for adding red, chocolate, orange or buff (yellow) colour pigment in grey or white cement in top layer of grit finish plaster. | sqm | 64.73 |
| 11.28 | Extra for adding blue or green colour pigment in grey or white cement in top layer of grit finish plaster. | sqm | 50.00 |
| 11.29 | Extra for adding black colour pigment in grey or white cement in top layer of grit finish plaster. | sqm | 93.75 |
| 11.30 | Extra for 27mm thick washed stone grit plaster for: | | - |
| 11.30.1 | Circular work not exceeding 6 m radius | sqm | 26.79 |

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| 11.30.2 | Moulding cornices and cover. | | - |
| 11.30.3 | Straight cornices in their length | sqm | 61.61 |
| 11.30.4 | Curved cornices in their length | sqm | 81.70 |
| 11.31 | Providing and making 12mm thick plain cement mortar bands in cement mortar 1:4 (1 cement : 4 fine sand) per cm width: | | - |
| 11.31.1 | Flush bands | metre | 1.88 |
| 11.31.2 | Sunk Bands | metre | 2.32 |
| 11.31.3 | Raised Band | metre | 2.68 |
| 11.32 | Providing and making 18 mm thick plain cement mortar band in cement mortar 1:4 (1 cement : 4 fine sand) per cm width: | | - |
| 11.32.1 | Flush bands | metre | 2.23 |
| 11.32.2 | Sunk Bands | metre | 2.68 |
| 11.32.3 | Raised Band | metre | 2.95 |
| 11.32.4 | Drip course | metre | 3.21 |
| 11.33 | Providing and making moulded mortar band in cement mortar 1:4 (1 cement : 4 fine sand) per cm width: | | - |
| 11.33.1 | 12 mm thick | metre | 3.75 |
| 11.33.2 | 18 mm thick | metre | 5.00 |
| 11.34 | Providing and making 18 mm thick moulded cement mortar band in two coats under layer of 12mm thick with cement mortar 1:5 (1 cement : 5 fine sand) and top layer 6mm thick with cement mortar 1:4 (1 cement : 4 fine sand) per cm width: | metre | 5.98 |
| 11.35 | Providing and making 18 mm thick artificial red stone plaster consisting of 12mm thick under coat plaster 1:4 (1 cement : 4 fine sand) and 6mm thick finishing coat of cement mortar 1:1:3 (1 cement :1 marble dust: 3 stone dust) mixed with red oxide to match the shade of red stone. | sqm | 206.25 |
| 11.36 | Extra for lining over plaster to imitate stone or concrete block walling. | sqm | 20.98 |
| 11.37 | Providing and making pointing on brick work with cement Mortar 1:3 (1 cement : 3 fine sand) | | - |
| 11.37.1 | Flush pointing | sqm | 24.11 |
| 11.37.2 | Ruled pointing | sqm | 29.91 |
| 11.37.3 | Cut off weather struck pointing | sqm | 37.50 |
| 11.37.4 | Raised and cut pointing | sqm | 53.13 |
| 11.38 | Providing and making pointing on stone work with cement Mortar 1:3 (1 cement : 3 fine sand) | | - |
| 11.38.1 | Flush pointing | sqm | 45.09 |
| 11.38.2 | Ruled pointing | sqm | 50.89 |
| 11.38.3 | Raised and cut pointing | sqm | 94.64 |
| 11.39 | Providing and making raised and cut pointing on stone work in white cement mortar 1:3 (1 White cement :3 Marble dust). | sqm | 160.71 |
| 11.40 | Making grove in cement plaster while plastering upto10 mm deep and 10 mm wide. | metre | 1.16 |

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| 11.41 | Providing and fixing chicken mesh weighting not less than 250 gms/ sqm as per IS : specification in the required width with 40mm long steel nails on vertical and horizontal surface near R.C.C. and brick walls junctions including scaffolding and all lead and lifts etc. complete before plastering upto 10mts in height. | sqm | 76.79 |
| 11.42 | Providing sand faced plaster to concrete or brick masonry surface in all positions in two coats, base coat 13mm thick in C.M. 1:4, cleaning the surface by combing it and finishing coat 8mm thick in C.M. 1:3 and taking out grains on surface by hand operated mechanical arrangement with cost of all material labour, all leads & lifts, and scaffolding etc. complete. | sqm | 160.71 |
| **12** | **FLOORING** | | - |
| 12.1 | Applying cement slurry on R.C.C. slab or cement concrete work using 2.75 kg/ sqm for receiving cement concrete floor including roughening cleaning etc complete. | sqm | 30.36 |
| 12.2 | 25mm thick cement concrete flooring with 1:2:4 cement concrete (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) finished with floating cost of neat cement. | sqm | 147.32 |
| 12.3 | Cement concrete flooring with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm) finished with a floating coat of neat cement. | | - |
| 12.3.1 | 40 mm thick | sqm | 198.21 |
| 12.3.2 | 50 mm thick | sqm | 226.79 |
| 12.3.3 | 75 mm thick | sqm | 308.04 |
| 12.4 | 52 mm thick cement concrete flooring with under layer of 40mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) and top layer of 12 mm thick cement metallic hardener concrete mix 1:2 (1 cement hardener mix : 2 stone aggregate of 6 mm size by volume) with metallic hardening compound of approved quality mixed with cement in ratio of 4:1 (4 cement : 1 metallic floor hardening compound by weight) including finishing etc. complete. | sqm | 393.75 |
| 12.5 | Extra for making chequers of approved pattern on cement concrete flooring, landing, pavement etc. | sqm | 14.29 |
| 12.6 | Cement plaster skirting upto 30 cm. height with cement mortar 1:3 (1 cement : 3 fine sand) finished with a floating coat of neat cement including rounding of junction with floor. | | - |
| 12.6.1 | 18 mm thick in two layers of 12mm and 6mm | sqm | 178.57 |
| 12.6.2 | 21 mm thick in two layers of 15mm and 6mm | sqm | 194.64 |
| 12.7 | Providing and fixing ceramic glazed wall tiles conforming to IS : 15622 of approved make, colours, shades and size on wall and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with matching pigment complete. | | - |
| 12.7.1 | Size upto 200x300mm | sqm | 524.11 |
| 12.7.2 | Size above 200x300mm | sqm | 576.79 |
| 12.8 | Providing and fixing plain cement concrete fibre reinforced heavy duty designer glazed floor tiles with uniform colour (for coloured tiles) and texture conforming to IS: 1237 (for abrasion wear) and IS : 516 (for compressive strength) of approved make, colours, shades and size on cement Mortar bed and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with matching pigment complete. | | - |
| 12.8.1 | On wall and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement : 3 coarse sand) | sqm | 822.32 |
| 12.8.2 | On floor, steps and risers over 20mm thick bed of cement Mortar 1:4 (1 cement : 4 coarse sand) | sqm | 808.04 |

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| 12.9 | Providing and laying ceramic glazed floor tiles conforming to IS : 15622 of approved size, make, colour, shade laid on 20 mm thick Cement Mortar 1:4 (1 cement : 4 coarse sand) including pointing the joints with white cement mixed with matching pigment etc., complete. | | - |
| 12.9.1 | Size 300x300mm | sqm | 617.86 |
| 12.9.2 | Size above 300x300mm | sqm | 650.00 |
| 12.10 | Providing and laying rectified ceramic glazed floor tiles of size 300x300mm and above conforming to IS : 15622 of approved make, colour, shade laid on 20 mm thick Cement Mortar 1:4 (1 cement : 4 coarse sand) including pointing the joints with white cement mixed with matching pigment etc., complete. | | - |
| 12.10.1 | Size 300x300mm | sqm | 766.07 |
| 12.10.2 | Size above 300x300mm | sqm | 808.04 |
| 12.11 | Providing and laying porcelain floor tiles of size 600x600mm with water absorption's less than 0.5% and conforming to IS : 15622 of approved make , laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc. complete. | sqm | 633.93 |
| 12.12 | Providing and laying vitrified floor tiles with soluble salt printing, of size 600x600mm with water absorption less than 0.5% and conforming to IS : 15622 of approved make, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc. complete. | sqm | 859.82 |
| 12.13 | Providing and laying vitrified floor tiles with double charge/ multi charge printing with water absorption less than 0.5% and conforming to IS : 15622 of approved make in all colours and shades and size mentioned below (+/- 10mm), laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc. complete. | | - |
| 12.13.1 | Size 600x600mm | sqm | 1,027.68 |
| 12.13.2 | Size 800x800mm | sqm | 1,201.79 |
| 12.13.3 | Size 1000x1000mm | sqm | 1,394.64 |
| 12.14 | Extra for providing and laying vitrified floor tiles with 2-5mm grove in between the tiles including grouting the grove with water resistant epoxy compound or with white cement and approved pigments etc. complete. | | - |
| 12.14.1 | Size 600x600mm | sqm | 48.21 |
| 12.14.2 | Size 800x800mm | sqm | 46.88 |
| 12.14.3 | Size 1000x1000mm | sqm | 45.98 |
| 12.15 | Deduct for not using 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) bedding in laying of floor tiles. | sqm | 214.29 |
| 12.16 | Extra for fixing glazed/ Ceramic/ Vitrified floor tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477 (Type 1) for interior applications, using 5kg. adhesive per sqm of tile area, in 3mm-6mm thickness in place of cement mortar. | sqm | 170.54 |

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| 12.17 | Extra for fixing glazed/ Ceramic/ Vitrified floor tiles with cement based high polymer modified quick-set tile adhesive (Water based) conforming to IS: 15477 (Type 2) for interior/exterior applications, using 5kg adhesive per sqm of tile area, in 3mm-6mm thickness in place of cement mortar. | sqm | 180.36 |
| 12.18 | 40mm thick marble chips flooring rubbed and polished to granolithic finish with under layer 34mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand: 4 graded stone aggregate 12.5 mm nominal size) and top layer 6mm thick with white or black or white and black marble chips of size from 1mm to 4mm nominal size laid after mixing with cement marble powder in mix 3:1 (3 cement :1 marble powder by weight) in proportion of 4:7 (4 cement marble powder mix : 7 marble chips by volume) | | - |
| 12.18.1 | Dark shade pigments with ordinary cement | sqm | 361.61 |
| 12.18.2 | Light shade pigment with white cement | sqm | 400.89 |
| 12.18.3 | Medium shade pigment with approx. 50% white cement, 50% ordinary cement | sqm | 361.61 |
| 12.18.4 | White cement without any pigment | sqm | 357.14 |
| 12.18.5 | Ordinary cement without any pigment | sqm | 325.00 |
| 12.19 | 40mm thick marble chips flooring rubbed and polished to granolithic finish with under layer 31mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand: 4 graded stone aggregate 12.5 mm nominal size) and top layer 9mm thick with white or black or white and black marble chips of size from 4mm to 7mm nominal size laid after mixing with cement marble powder in mix 3:1 (3 cement :1 marble powder by weight) in proportion of 4:7 (4 cement marble powder mix : 7 marble chips by volume) | | - |
| 12.19.1 | Dark shade pigments with ordinary cement | sqm | 400.89 |
| 12.19.2 | Light shade pigment with white cement | sqm | 435.71 |
| 12.19.3 | Medium shade pigment with approx. 50% white cement, 50% ordinary cement | sqm | 401.79 |
| 12.19.4 | White cement without any pigment | sqm | 400.00 |
| 12.19.5 | Ordinary cement without any pigment | sqm | 349.11 |
| 12.20 | 40mm thick marble chips flooring rubbed and polished to granolithic finish with under layer 28mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand: 4 graded stone aggregate 12.5 mm nominal size) and top layer 12mm thick with white or black or white and black marble chips of size from 7mm to 10mm nominal size laid after mixing with cement marble powder in mix 3:1 (3 cement :1 marble powder by weight) in proportion of 4:7 (4 cement marble powder mix : 7 marble chips by volume) | | - |
| 12.20.1 | Dark shade pigments with ordinary cement | sqm | 438.39 |
| 12.20.2 | Light shade pigment with white cement | sqm | 486.61 |
| 12.20.3 | Medium shade pigment with approx. 50% white cement, 50% ordinary cement | sqm | 439.29 |
| 12.20.4 | White cement without any pigment | sqm | 437.50 |
| 12.20.5 | Ordinary cement without any pigment | sqm | 365.18 |

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| 12.21 | Marble chips skirting (upto 30 cm height) rubbed and polished to granolithic finish with layer 6mm thick with white or black or white and black marble chips of size from smallest of 4mm nominal size laid after mixing with cement marble powder in mix 3:1 (3 cement :1 marble powder by weight) in proportion of 4:7 (4 cement marble powder mix ; 7 marble chips by volume) | | - |
| 12.21.1 | 18mm thick with under layer of 12mm thick cement plaster 1:3 (1 cement : 3 fine sand) | | - |
| 12.21.2 | Dark shade pigments with ordinary cement | sqm | 359.82 |
| 12.21.3 | Light shade pigment with white cement | sqm | 383.93 |
| 12.21.4 | Medium shade pigment with approx. 50% white cement, 50% ordinary cement | sqm | 359.82 |
| 12.21.5 | White cement without any pigment | sqm | 358.93 |
| 12.21.6 | Ordinary cement without any pigment | sqm | 323.21 |
| 12.21.7 | 21mm thick with under layer of 15mm thick cement plaster 1:3 (1 cement : 3 fine sand) | | - |
| 12.21.8 | Dark shade pigments with ordinary cement | sqm | 368.75 |
| 12.21.9 | Light shade pigment with white cement | sqm | 393.75 |
| 12.21.10 | Medium shade pigment with approx. 50% white cement, 50% ordinary cement | sqm | 369.64 |
| 12.21.11 | White cement without any pigment | sqm | 368.75 |
| 12.21.12 | Ordinary cement without any pigment | sqm | 332.14 |
| 12.22 | Crazy marble stone flooring including filling the gaps with white cement marble powder mixture (3 white cement : 1 marble powder) by weight mixed with approved light shade pigment further mixed with white or black or white and black marble chips of sizes from 1mm to 4mm nominal size) in volumetric proportion of 4:7 (4 cement marble powder mix : 7 marble chips) and under layer of 25mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) rubbing, polishing and cement slurry etc. complete. | sqm | 412.50 |
| 12.23 | Extra for providing and fixing metal strip in joints of Terrazo floor/ cement concrete floor or like. | | - |
| 12.23.1 | Aluminium strips | kg | 290.18 |
| 12.23.2 | Brass strips | kg | 358.93 |
| 12.24 | Extra for providing and fixing 4mm thick AC sheet strip in joints of cement concrete floor or like. | sqm | 239.29 |
| 12.25 | Extra for providing and fixing 4mm thick glass strip in joints of Terrazo floor/ cement concrete floor or like. | | - |
| 12.25.1 | 30 mm wide | metre | 12.95 |
| 12.25.2 | 40 mm wide | metre | 16.07 |
| 12.25.3 | 60 mm wide | metre | 22.32 |
| 12.26 | Extra for using chocolate grey or yellow marble chips instead of white & black chips in marble chips flooring or skirting. | | - |
| 12.26.1 | In top 6mm thick layer | sqm | 6.79 |
| 12.26.2 | In top 9 mm thick layer | sqm | 10.71 |
| 12.26. | In top 12 mm thick layer | sqm | 13.39 |

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| 12.27 | Extra for Terrazzo flooring laid as floor borders marginal and similar bands exceeding 7.5 cm but not exceeding 30 cm in width | sqm | 12.05 |
| 12.28 | Extra for laying terrazzo in narrow band not exceeding 7.5 cm. in width | metre | 4.02 |
| 12.29 | Extra for laying terrazzo flooring in staircase treads not exceeding 30cm in width including cost of forming nosing etc. | sqm | 17.86 |
| 12.30 | Extra for making moulded noising in Terrazzo including returned moulded ends and angles to mouldings. | metre | 36.16 |
| 12.31 | Special surface finishing to treads and risers and the ends of concrete steps and the like including form work. | sqm | 25.45 |
| 12.32 | Precast Terrazzo tiles 22mm thick with graded white or black or white and black marble chips of size upto 6mm laid in floors, tread of steps and landing on 25mm thick bed of cement mortar 1:6 (1 cement : 6 coarse sand) jointed with neat cement slurry mixed with pigment to match the shade of tiles, including rubbing and polishing complete with precast tiles of: | | - |
| 12.32.1 | Light shade using white cement | sqm | 623.21 |
| 12.32.2 | Medium shade using approximately. 50% white cement and 50% ordinary cement. | sqm | 600.89 |
| 12.32.3 | Dark shade using ordinary cement | sqm | 561.61 |
| 12.33 | Extra if Terrazo tiles are laid in treads or steps not exceeding 30 cm. in width | sqm | 15.18 |
| 12.34 | Precast Terrazzo tiles 22mm thick with marble chips of size upto 6mm in skirting and risers of steps and exceeding 30cm in height on 12mm thick cement plaster 1:3 (1 cement : 3 coarse sand) jointed with neat cement slurry including rubbing and polishing complete with tiles of. | | - |
| 12.34.1 | Light shade using white cement | sqm | 632.14 |
| 12.34.2 | Medium shade using approximately. 50% white cement and 50% ordinary cement. | sqm | 608.93 |
| 12.34.3 | Dark shade using ordinary cement | sqm | 586.61 |
| 12.35 | Extra if cut tiles other than half tiles are used in risers of steps skirting and dado. | sqm | 24.11 |
| 12.36 | Chequered terrazzo tiles 22 mm thick with graded marble chips of size upto 6mm in floors on 25mm thick bed of cement mortar 1:6 (1 cement : 6 coarse sand) jointed with neat cement slurry mixed with pigment to match the shade of tiles including grinding rubbing and polishing complete. | | - |
| 12.36.1 | Light shade using white cement | sqm | 713.39 |
| 12.36.2 | Medium shade using approximately. 50% white cement and 50% ordinary cement. | sqm | 636.61 |
| 12.36.3 | Dark shade using ordinary cement | sqm | 597.32 |
| 12.37 | Chequered precast cement concrete tiles 22mm thick in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of tile including cleaning of joint etc complete on 20 mm thick bed of cement mortar 1:4 (1 cement :4 coarse sand) : | | - |
| 12.37.1 | Light shade using white cement | sqm | 571.43 |
| 12.37.2 | Medium shade using approximately. 50% white cement and 50% ordinary cement. | sqm | 527.68 |
| 12.37.3 | Dark shade using ordinary cement | sqm | 462.50 |
| 12.37.4 | Ordinary cement without any pigment | sqm | 458.93 |

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| 12.38 | 15mm thick Marble stone slab flooring over 18mm (Average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry including grinding rubbing and polishing etc. complete. (Area of slab should be 0.50 sqm and above) | | - |
| 12.38.1 | Makrana white second quality. | sqm | 3,350.00 |
| 12.38.2 | Raj Nagar plain. | sqm | 1,542.86 |
| 12.38.3 | Agaria White | sqm | 2,180.36 |
| 12.38.4 | Black Zebra. | sqm | 1,336.61 |
| 12.38.5 | Udaipur green marble | sqm | 1,336.61 |
| 12.38.6 | Pink plain marble. | sqm | 1,574.11 |
| 12.38.7 | Wonder marble. | sqm | 2,436.61 |
| 12.38.8 | Katni marble. | sqm | 1,570.54 |
| 12.39 | 15mm thick Marble stone slab in, tread & risers of steps, skirting, dado, walls and pillars on 12mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) and jointed with grey cement slurry including matching pigment, rubbing and polishing etc. complete. (single stone is to be used for risers and treads of steps and width of stone for skirting and dado shall be equal to the height of skirting & dado and length of 1.0 M). | | - |
| 12.39.1 | Makrana white second quality. | sqm | 3,419.64 |
| 12.39.2 | Raj Nagar plain. | sqm | 1,612.50 |
| 12.39.3 | Agaria White | sqm | 2,250.00 |
| 12.39.4 | Black Zebra. | sqm | 1,407.14 |
| 12.39.5 | Udaipur green marble | sqm | 1,407.14 |
| 12.39.6 | Pink plain marble. | sqm | 1,643.75 |
| 12.39.7 | Wonder marble. | sqm | 2,506.25 |
| 12.39.8 | Katni marble. | sqm | 1,641.07 |
| 12.40 | 15mm thick Marble stone tile flooring over 18mm (Average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry including grinding rubbing and polishing etc. complete. (Area of tile should be 0.18 sqm and above) | | - |
| 12.40.1 | Makrana white second quality. | sqm | 1,674.11 |
| 12.40.2 | Raj Nagar plain. | sqm | 861.61 |
| 12.40.3 | Agaria White | sqm | 1,133.04 |
| 12.40.4 | Black Zebra. | sqm | 922.32 |
| 12.40.5 | Udaipur green marble | sqm | 759.82 |
| 12.40.6 | Pink plain marble. | sqm | 868.75 |

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| 12.41 | 15mm thick Marble tiles in risers and treads of steps skirting dado and pillars laid on 12mm (Average) thick base of cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry including rubbing and polishing etc. complete (Area of tiles to be upto 0.18 sqm) | | - |
| 12.41.1 | Makrana white second quality. | sqm | 1,743.75 |
| 12.41.2 | Raj Nagar plain. | sqm | 932.14 |
| 12.41.3 | Agaria White | sqm | 1,202.68 |
| 12.41.4 | Black Zebra. | sqm | 991.96 |
| 12.41.5 | Udaipur green marble | sqm | 829.46 |
| 12.41.6 | Pink plain marble. | sqm | 938.39 |
| 12.42 | Extra for using white cement slurry instead of grey cement slurry in joints of marble stone flooring or tiles for all thickness | sqm | 10.71 |
| 12.43 | Extra for nosing in marble stone for treads. | metre | 72.32 |
| 12.44 | Extra for nosing in Granite stone for treads. | metre | 112.50 |
| 12.45 | 15 mm thick Table rubbed polished Granite stone slab flooring laid over 20mm (Average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing etc. complete. (Area of slab should be 0.50 sqm and above) | | - |
| 12.45.1 | Granite stone grey/pink | sqm | 1,603.57 |
| 12.45.2 | Granite stone black | sqm | 2,362.50 |
| 12.45.3 | Granite stone lakha red/ shahi red | sqm | 3,750.00 |
| 12.46 | 15 mm thick Table rubbed polished Granite stone slab in risers and treads of steps skirting dado and pillars laid on 12mm (Average) thick base of cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry including rubbing and polishing etc. complete (single stone is to be used for risers and treads of steps and width of stone for skirting and dado shall be equal to the height of skirting & dado and length of 1.0 m). | | - |
| 12.46.1 | Granite stone grey/pink | sqm | 1,668.75 |
| 12.46.2 | Granite stone black | sqm | 2,427.68 |
| 12.46.3 | Granite stone lakha red/ shahi red | sqm | 3,815.18 |
| 12.47 | 8 mm thick Table rubbed polished Granite stone tile flooring laid over 20mm (Average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing etc. complete. | | - |
| 12.47.1 | Granite stone grey/pink | sqm | 845.54 |
| 12.47.2 | Granite stone black | sqm | 1,186.61 |
| 12.47.3 | Granite stone lakha red/ shahi red | sqm | 1,819.64 |
| 12.48 | 8 mm thick Table rubbed polished Granite stone tile in risers and treads of steps skirting dado and pillars laid on 12mm (Average) thick base of cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry including rubbing and polishing etc. complete. | | - |
| 12.48.1 | Granite stone grey/pink | sqm | 909.82 |

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| 12.48.2 | Granite stone black | sqm | 1,251.79 |
| 12.48.3 | Granite stone lakha red/ shahi red | sqm | 1,884.82 |
| 12.49 | 25 mm thick KOTA stone slab flooring over 20mm (Average) thick base of cement mortar 1:4 laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including grinding rubbing and polishing etc. complete (Area of slab to be over 0.20 sqm and upto 0.50 sqm) | sqm | 800.89 |
| 12.50 | KOTA stone slab 25mm thick in risers and treads of steps, skirting dado and pillar laid in 12mm (Average) thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete. (single stone is to be used for riser and treads of steps and the width of stone for skirting and dado shall be equal to the height of skirting/ dado up to length of 1.0 M.) | sqm | 883.93 |
| 12.51 | Extra for nosing in steps and treads of Kota stone slab. | metre | 62.05 |
| 12.52 | Extra for nosing in steps and treads of red or white rough dressed sand stone. | metre | 31.70 |
| 12.53 | Extra for nosing in steps and treads of red or white fine dressed sand stone. | metre | 83.93 |
| 12.54 | Extra for nosing in steps and treads of red or white fine dressed and rubbed sand stone. | metre | 105.36 |
| 12.55 | Extra for necessary grinding and polishing to get mirror finish on KOTA/ Marble Stone flooring/ steps/ treads instead of normal grinding and polishing. | sqm | 234.82 |
| 12.56 | 25mm thick Local RAJIM/ Red Flag stone slab flooring laid over 20mm (Average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid over & jointed with grey cement slurry mixed with pigments to match the shade of the stone i/c grinding, rubbing and polishing. | sqm | 460.71 |
| 12.57 | 25mm thick Local RAJIM/ Red Flag stone slab in riser of steps, skirting, dado and pillars laid on 12mm (Average) thick cement mortar 1:4 (1 cement : 4 coarse sand) and joint with grey cement slurry mixed with pigments to match the shade of the slab i/c grinding, rubbing and polishing. | sqm | 531.25 |
| 12.58 | 25mm thick un-polished Local RAJIM/ Red Flag stone slab flooring laid over 20mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid over & jointed with grey cement slurry mixed with pigments to match the shade of the stone. | sqm | 382.14 |
| 12.59 | Providing and fixing un-polished 45mm to 50mm thick RAJIM SAND STONE in floors laid on sand bed of average thickness 50mm and pointing with cement mortar 1:3 (1 cement : 3 coarse sand) including finishing complete. | sqm | 250.00 |
| 12.60 | Providing and fixing 20mm thick Jaisalmer stone flooring in any pattern over & including 20mm thick cement mortar bedding in CM 1:6 including cement float and filling joints with white neat cement slurry mixed with pigment to match the shade of stone with all wastage of all material including grinding, finishing, polishing and cleaning etc. complete (Edges and joints of stone are cut neatly so that thickness of joints to be not more than 1.50mm ) and i/c cost of all materials, labour and running & hire charges of all machineries required for the work at all heights. | sqm | 737.50 |
| 12.61 | Providing and fixing 20mm thick Jaisalmer stone in skirting, coping, dado tread & risers of steps both sides machine cut over and including 12mm thick cement plaster in CM 1:4 with cost of pigment, cement labour for grinding with cost of all materials & labour etc. complete at all heights. | sqm | 825.89 |
| 12.62 | Extra for flooring of any type of stone/ tiles laid in approved design and pattern (Kite or other complicated). | sqm | 76.79 |

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| 12.63 | Extra for laying of any type of stone in flooring in strips: | | - |
| 12.63.1 | Upto 100 mm width | sqm | 38.39 |
| 12.63.2 | Above 100 mm and upto 150 mm | sqm | 25.45 |
| 12.64 | Providing and laying upto 10mm wide stone strips for pattern in flooring of approved colour and shade of: | | - |
| 12.64.1 | Granite stone | metre | 39.73 |
| 12.64.2 | Jaisalmer stone | metre | 19.20 |
| 12.65 | Providing & laying 60mm thick precast interlocking concrete blocks of approved size (approx 305 sqcm) and shape/ pattern, over 40 mm thick average complete coarse sand bed with joints of 3mm thick filled by fine sand including leveling with surface vibrator, temping and sweeping etc. complete of minimum compressive strength of 250 kg/sq.cm | | - |
| 12.65.1 | Plain/ normal coloured precast interlock concrete block | sqm | 389.29 |
| 12.65.2 | Pigment Coloured (rubber mould) precast interlock concrete blocks | sqm | 564.29 |
| 12.66 | Providing and fixing precast compressed plain cement concrete edge restraint block of size 500mmx250mmx60mm of compressive strength of 200kg per sq.cm manufactured by electro hydraulically operated block machine by excavated trench of 150mm depth, laid width wise etc. complete | metre | 150.89 |
| 12.67 | Providing and laying brush concrete flooring of 12mm thick cement concrete (1 cement :2 black metal, 6mm size) mixed with granite pigment of approved quality in a ratio of 2.08 kg/sq metre are laid over & including a base of 40mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm size) with 12.50 mm size graded B.T metal mechanically mixed including neat cement finish over granite with red colour pigment including glass strip of size 45x3 mm, cost of all material & labor etc. complete. | sqm | 414.29 |
| 12.68 | 25mm wooden planking tongued and grooved in flooring including fixing with iron screws complete with: | | - |
| 12.68.1 | Teak wood | sqm | 3,056.25 |
| 12.68.2 | Other than teak wood such as sal, haldoo and Bija | sqm | 1,749.11 |
| 12.69 | 38 mm thick parquet (wood blocks) flooring of teak wood laid over 25mm thick leveling layer of cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 stone aggregate 10mm nominal size) to be paid separately coated with thin layer of hot bitumen (blown type) @ 2.45 kg/ sqm including fixing blocks after dipping in hot bitumen (blown type) upto half depth planned, leveled, smooth and finished complete. | sqm | 5,565.18 |
| 12.70 | Extra for plaining the lower surface of wooden planking | sqm | 42.86 |
| 12.71 | Providing and fixing 2mm thick homogeneous polyvinyl chloride sheet in flooring and skirting in approved pattern on a smooth and damp proof base using rubber based adhesive @ 0.25 kg per sqm of approved quality and manufacturer like Dunlop S-758, Fevicol SR 998 or equivalent including rolling with light wooden roller weighting about 5 kg. all complete in approved colour and shade. | sqm | 451.79 |

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| 12.72 | Providing and fixing in position homogeneous P.V.C. quartz reinforced floor covering tiles conforming to I.S. 3462/1986 of size 300x300 mm over existing smooth and finished surface including removal of dust etc. from existing floor and laying approved adhesive (Dunlop S- 758, Fevicol SR 998 or equivalent) at the rate of 0.25 kg/ sqm including rolling with light wooden roller weighing about 5 kg etc. complete. | | - |
| 12.72.1 | 1.6mm thick tiles (weight 3 kg per sqm) | sqm | 437.50 |
| 12.72.2 | 2.0 mm thick tiles (Weight 3.80 kg per sqm) | sqm | 494.64 |
| 12.72.3 | 3 mm thick tiles (Weight 6 kg per sqm) | sqm | 692.86 |
| 12.73 | Dry brick on edge flooring in required pattern with bricks of class designation 3.5 on a bed of 12 mm mud mortar including filling joints with fine sand complete. | sqm | 314.29 |
| **13** | **MARBLE & STONE WALL LINING WORK** | | - |
| 13.1 | 15 mm thick Marble work (machine cut, table rubbed & polished) for wall lining (veneer work) in cement mortar 1:3 (1 cement : 3 coarse sand) including pointing with white cement mortar 1:2 (1 white cement : 2 marble dust) mixed with matching pigment. (Area of slab should be over 0.5 sqm) | | - |
| 13.1.1 | Makrana white second quality. | sqm | 3,420.54 |
| 13.1.2 | Raj Nagar plain. | sqm | 1,691.07 |
| 13.1.3 | Agaria White | sqm | 2,301.79 |
| 13.1.4 | Black Zebra. | sqm | 1,491.96 |
| 13.1.5 | Udaipur green marble | sqm | 1,491.96 |
| 13.1.6 | Pink plain marble. | sqm | 1,718.75 |
| 13.1.7 | Wonder marble. | sqm | 2,546.43 |
| 13.1.8 | Katni marble. | sqm | 1,718.75 |
| 13.2 | 8 mm thick Marble tile work (machine cut, table rubbed & polished) for wall lining (veneer work) in cement mortar 1:3 (1 cement : 3 coarse sand) including pointing with white cement mortar 1:2 (1 white cement : 2 marble dust) mixed with matching pigment. | | - |
| 13.2.1 | Makrana white second quality | sqm | 1,878.57 |
| 13.2.2 | Raj Nagar plain | sqm | 1,066.07 |
| 13.2.3 | Agaria White | sqm | 1,336.61 |
| 13.2.4 | Black Zebra | sqm | 1,120.54 |
| 13.2.5 | Udaipur green marble | sqm | 958.04 |
| 13.2.6 | Pink plain marble | sqm | 1,066.07 |
| 13.3 | 15 mm thick Marble work (machine cut, table rubbed & polished) for kitchen platform, vanity counters, window sills and similar locations of required size laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) including joints treated with white cement mixed with matching pigment including rubbing and polishing to edge moulding to give high gloss finish. | | - |
| 13.3.1 | Makrana white second quality. | sqm | 3,455.36 |
| 13.3.2 | Raj Nagar plain. | sqm | 1,805.36 |
| 13.3.3 | Agaria White | sqm | 2,387.50 |
| 13.3.4 | Black Zebra. | sqm | 1,614.29 |
| 13.3.5 | Udaipur green marble | sqm | 1,614.29 |
| 13.3.6 | Pink plain marble. | sqm | 1,831.25 |
| 13.3.7 | Wonder marble. | sqm | 2,621.43 |
| 13.3.8 | Katni marble. | sqm | 1,831.25 |

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| 13.4 | 15mm thick Granite work (machine cut, table rubbed & mirror polished) for wall lining (veneer work) in cement mortar 1:3 (1 cement : 3 coarse sand) including pointing with cement mortar 1:2 (1 white cement: 2 marble dust) mixed with matching pigment. (Area of slab should be over 0.5 sqm). | | - |
| 13.4.1 | Granite stone grey/pink | sqm | 1,748.21 |
| 13.4.2 | Granite stone black | sqm | 2,474.11 |
| 13.4.3 | Granite stone lakha red/ shahi red | sqm | 3,801.79 |
| 13.5 | 8mm thick Granite tile work (machine cut, table rubbed & mirror polished) for wall lining (veneer work) in cement mortar 1:3 (1 cement : 3 coarse sand) including pointing with cement mortar 1:2 (1 white cement : 2 marble dust) mixed with matching pigment. | | - |
| 13.5.1 | Granite stone grey/pink | sqm | 1,185.71 |
| 13.5.2 | Granite stone black | sqm | 1,526.79 |
| 13.5.3 | Granite stone lakha red/ shahi red | sqm | 2,160.71 |
| 13.6 | 15mm thick Granite work (machine cut, table rubbed & mirror polished) for kitchen platform, vanity counters, window sills and similar locations of required size laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) including joints treated with white cement mixed with matching pigment including rubbing and polishing to edge moulding to give high gloss finish. | | - |
| 13.6.1 | Granite stone grey/pink | sqm | 2,201.79 |
| 13.6.2 | Granite stone black | sqm | 2,927.68 |
| 13.6.3 | Granite stone lakha red/ shahi red | sqm | 4,255.36 |
| 13.7 | Stone work with DHOLPUR SAND STONE (machine cut edge) exposed face fine dressed with rough backing for wall lining etc. (Veneer work) upto 10 metre height, backing filled with a grout of 12mm thick cement mortar 1:3 (1 cement : 3 coarse sand), including pointing in white cement mortar 1:2 (1 cement : 2 stone dust) with an admixture of pigment matching the stone shade. (To be secured to the backing by means of cramps which shall be paid separately) | | - |
| 13.7.1 | 40mm. thick | sqm | 1,538.39 |
| 13.7.2 | 50mm. thick | sqm | 1,687.50 |
| 13.7.3 | 60mm. thick | sqm | 1,845.54 |
| 13.8 | Stone work with DHOLPUR SAND STONE (machine cut edge) exposed face machine cut and table rubbed with rough backing for wall lining etc. (Veneer work) upto 10 metre height, backing filled with a grout of 20 mm thick cement mortar 1:3 (1 cement : 3 coarse sand), including pointing in white cement mortar 1:2 (1 cement : 2 stone dust) with an admixture of pigment matching the stone shade. (To be secured to the backing by means of cramps which shall be paid separately) | | - |
| 13.8.1 | 40mm. thick | sqm | 1,833.93 |
| 13.8.2 | 50mm. thick | sqm | 1,983.04 |
| 13.8.3 | 60mm. thick | sqm | 2,155.36 |
| 13.9 | Stone work with KOTA STONE Slab (machine cut edge) exposed face machine cut and table rubbed with rough backing for wall lining etc. (Veneer work) upto 10 metre height, backing filled with a grout of 20 mm thick cement mortar 1:3 (1 cement: 3 coarse sand), jointing with cement mortar 1:2 (1 cement: 2 stone dust) with admixture of pigment matching the stone shade including rubbing and polishing complete. (To be secured to the backing by means of cramps which shall be paid separately) | | - |
| 13.9.1 | 25mm thick | sqm | 916.07 |
| 13.9.2 | 40mm thick | sqm | 1,022.32 |

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| 13.10 | Stone tile work (mirror polished, machine cut edge) for wall lining upto 10 metre height, with special adhesive over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), including pointing in white cement mortar 1:2 (1 cement : 2 marble dust) with an admixture of pigment matching the stone shade. | | - |
| 13.10.1 | Granite Stone of any colour and shade - 8mm thick | sqm | 1,188.39 |
| 13.10.2 | White/green/black marble - 8mm thick | sqm | 1,029.46 |
| 13.10.3 | Mica/ White stone - 10-20mm thick | sqm | 607.14 |
| 13.11 | Wall lining butch work upto 10m height with DHOLPUR STONE rough facing on the exposed surface with strips of 40 mm thick, 300mm (minimum) length and required width over 12mm thick cement mortar 1:3 (1 cement : 3 coarse sand), embedding every tenth layer and bottom most layer of 75mm thick strips in masonry or concrete after making necessary chases of size 75mmx75mm, ruled pointing in white cement mortar 1:2 (1 cement : 2 stone dust) with an admixture of pigment matching the stone shade. | sqm | 1,533.04 |
| 13.12 | Providing and fixing dry cladding upto 10 metre heights with 30mm thick gang saw cut DHOLPUR SAND STONE (machine cut edges) of uniform colour and size upto 1mx1m size, fixed to structural steel frame work and/ or with the help of cramps, pins etc. and sealing the joints with weather sealant. (The steel frame work, stainless steel cramps and pins etc. shall be paid for separately.) | sqm | 1,609.82 |
| 13.13 | Extra for stone work (Veneer work) curved on plan with a mean radius not exceeding 6.0m. | sqm | 51.34 |
| 13.14 | Extra for stone work for wall lining on exterior wall beyond 10m height from ground level for every additional height of 3 metre or part thereof. | sqm | 114.29 |
| 13.15 | Providing and fixing clamps of required size and shape for anchoring stone wall lining to the baking or securing adjacent stone in stone wall lining in cement mortar 1:2 (1 cement : 2 coarse sand) including making the necessary chases and/or holes in stone/wall. | | - |
| 13.15.1 | Gun metal cramps size 25mm x 6mm x 300mm | kg | 117.86 |
| 13.15.2 | Stainless steel cramps with stainless steel nuts and bolts and washer (total weight not less than 260 gms). | kg | 350.89 |
| 13.16 | Providing and fixing structural steel frame (for dry cladding of sand stone) on walls at all heights using M.S. square/ rectangular tube in the approved pattern including cost of cutting, bending, welding etc. The frame work shall be supported in wall with the help of MS brackets/ lugs of angle iron/ flats etc. which shall be welded to the frame and embedded in brick wall with cement concrete block of grade 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) of size 300x230x300mm and with approved expansion hold fasteners on CC/RCC surface including drilling necessary holes, approved cramps/ pins etc. shall be welded to the frame work to support stone cladding, the steel work will be given a priming coat of "ZINC" primer and painted with two or more coats of epoxy paint. (Stainless steel cramps shall be paid separately) | kg | 105.36 |
| 13.17 | Providing and fixing 15mm thick Granite (machine cut, table rubbed & mirror polished on both sides) for partition curtain in toilets or similar locations of required size in wall with cement mortar 1:4 (1 cement : 4 coarse sand) including cutting chase in wall and joint with wall treated with white cement mixed with matching pigment including rubbing and polishing to edge moulding to give high gloss finish. | | - |

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| 13.17.1 | Granite stone grey/pink | sqm | 1,884.82 |
| 13.17.2 | Granite stone black | sqm | 2,610.71 |
| 13.17.3 | Granite stone lakha red/ shahi red | sqm | 3,937.50 |
| 13.18 | Providing and fixing copper pins 7.5 cm. long 6mm dia. for securing adjacent stone wall lining in cement mortar 1:2 (1 cement : 2 coarse sand) including making necessary chases. | each | 24.11 |
| 13.19 | Extra for providing edge moulding to 15mm thick stone counters, vanities etc. including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in-Charge. | | - |
| 13.19.1 | Marble work | metre | 91.96 |
| 13.19.2 | Granite work | metre | 153.57 |
| 13.20 | Extra for fixing marble /granite stone in facia and drops of width upto 150 mm with epoxy resin based adhesive instead of cement mortar including cleaning etc. complete. | metre | 229.46 |
| 13.21 | Extra for making opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/Granite/stone work including making necessary holes for pillar taps etc. including rubbing and polishing of cut edges etc. complete. | each | 225.89 |
| 13.22 | Mirror polishing on marble work/ Kota stone/ Granite work where ever required to give high gloss finish complete. | | - |
| 13.22.1 | On walls/ Floor | sqm | 164.29 |
| 13.22.2 | On kitchen platform, sills and similar | sqm | 184.82 |
| 13.23 | Providing and fixing (Table Rubbed & polished) 30mm thick jali throughout (without sunk or moulded in jali slab) in white cement mortar 1:2 (1 white cement : 2 marble dust) with and admixture of pigment to match the marble shade, jali pattern to be cut square to jali slab without any chamfers as per drawings & designs and patterns approved by the Engineer-in-charge. | | - |
| 13.23.1 | Makrana white second quality. | sqm | 8,288.39 |
| 13.23.2 | Raj Nagar plain. | sqm | 4,575.89 |
| 13.23.3 | Agaria White | sqm | 6,308.04 |
| 13.23.4 | Black Zebra. | sqm | 4,328.57 |
| 13.23.5 | Udaipur green marble | sqm | 4,328.57 |
| 13.23.6 | Pink plain marble. | sqm | 4,823.21 |
| 13.24 | Providing and fixing one side polished 25 mm thick RAJIM SAND STONE shelves fixed in walls in cement mortar 1:3 (1 cement : 3 coarse sand) including finishing complete. | | - |
| 13.24.1 | One side polished | sqm | 295.54 |
| 13.24.2 | Both side polished | sqm | 369.64 |
| **14** | **DISTEMPERING, PAINTING AND FINISHING** | | - |
| 14.1 | Providing and applying plaster of paris putty over plastered wall surface including scaffolding complete | | - |
| 14.1.1 | Upto 2 mm thickness to make surface even and smooth in line and level. | sqm | 56.25 |
| 14.1.2 | More than 2 mm thickness to make surface even and smooth in true plumb and line and level. | sqm | 83.48 |

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| 14.2 | Providing and applying plaster of paris putty over plastered ceiling surface including scaffolding complete. | | - |
| 14.2.1 | Upto 2 mm thickness to make surface even and smooth in line and level. | sqm | 58.93 |
| 14.2.2 | More than 2 mm thickness to make surface even and smooth in true plumb and line and level. | sqm | 75.89 |
| 14.3 | Providing and making plaster of paris moulding bend in approved pattern in ceiling / wall in line and level including scaffolding complete. | | - |
| 14.3.1 | Upto 50 mm width and 10mm thick | metre | 16.52 |
| 14.3.2 | Above 50 mm and upto 100 mm width and 10mm thick | metre | 22.77 |
| 14.4 | Preparation of wall surface by applying a coat of putty comprising of chalk mitti, varnish and white lead in ratio 2½:1:1 (2½ kg chalk mitti : 1 litre varnish : 1 kg white lead) respectively, sand papering and making the surface smooth to proper shape and presentable conditions. | sqm | 31.25 |
| 14.5 | White washing with lime to give an even shade. | | - |
| 14.5.1 | On new work (Three or more coats) | sqm | 8.39 |
| 14.5.2 | On old work (Two or more coats) | sqm | 4.91 |
| 14.5.3 | On old work (one coats) | sqm | 2.86 |
| 14.6 | White washing with whiting to give an even shade. | | - |
| 14.6.1 | On new work (Three or more coats) | sqm | 8.04 |
| 14.6.2 | On old work (Two or more coats) | sqm | 4.73 |
| 14.6.3 | On old work (one coats) | sqm | 2.68 |
| 14.7 | Colour washing such as green, blue or buff with lime to give an even shade. | | - |
| 14.7.1 | On new work (two or more coats) including a base coat of white washing | sqm | 10.71 |
| 14.7.2 | On old work (Two or more coats) | sqm | 5.00 |
| 14.7.3 | On old work (one coats) | sqm | 2.86 |
| 14.8 | Hiramchi colour wash to give and even shade. | | - |
| 14.8.1 | On new work (Two or more coats) | sqm | 4.46 |
| 14.8.2 | On old work (one coats) | sqm | 2.59 |
| 14.9 | Distempering with acrylic washable distemper to give an even shade. | | - |
| 14.9.1 | On new work (Two or more coats) | sqm | 33.93 |
| 14.9.2 | On old work (one or more coats) | sqm | 15.63 |
| 14.10 | Wall painting with acrylic premium emulsion (plastic) paint of required shade to give an even shade. | | - |
| 14.10.1 | On new work (two or more coats) | sqm | 39.73 |
| 14.10.2 | On old work (one or more coats) | sqm | 25.45 |
| 14.11 | Wall painting with acrylic luxury emulsion (plastic) paint of required shade to give an even shade. | | - |
| 14.11.1 | On new work (two or more coats) | sqm | 46.88 |
| 14.11.2 | On old work (one or more coats) | sqm | 29.91 |
| 14.12 | Applying one coat of cement primer on wall surface (applied @ 0.80 litrs/10 sqm) complete. | sqm | 20.54 |
| 14.13 | Providing and applying 2mm thick ready mix exterior grade approved make putty (like Birla wall care, Alltek Superfine W/R of (NCL), Asian, ICI, Nerolac, J.K. wall putty) on walls to make the surface smooth and even. | sqm | 84.38 |

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| 14.14 | Finishing walls with water proofing cement paint of required shade to give an even shade. | | - |
| 14.14.1 | On new work (Two or more coats applied @ 3.84 kg/10 sqm) | sqm | 36.61 |
| 14.14.2 | On old work (one or more coats applied @ 2.20 kg/10 sqm) | sqm | 22.77 |
| 14.15 | Painting exterior surface with ACRYLIC SMOOTH exterior paint of required shade as per manufacturer's specifications to give protective and decorative finish including cleaning washing of surface etc. complete with: | | - |
| 14.15.1 | On new work (Two or more coats applied @ 1.43 ltr/ 10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm) | sqm | 50.00 |
| 14.15.2 | On old work (One or more coats applied @ 0.83 ltr/ 10 sqm) | sqm | 33.04 |
| 14.16 | Painting exterior surface with PREMIUM ACRYLIC SMOOTH exterior paint of required shade as per manufacturer's specifications to give protective and decorative finish including cleaning washing of surface etc. complete with: | | - |
| 14.16.1 | On new work (Two or more coats applied @ 1.43 ltr/ 10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm) | sqm | 66.52 |
| 14.16.2 | On old work (One or more coats applied @ 0.83 ltr/ 10 sqm) | sqm | 42.41 |
| 14.17 | Painting exterior surface with TEXTURED exterior paint of required shade as per manufacturer's specifications to give protective and decorative finish including cleaning washing of surface etc. complete with: | | - |
| 14.17.1 | On new work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including priming coat of exterior primer applied @ 2.20kg/ 10 sqm | sqm | 125.00 |
| 14.17.2 | On old work (One or more coats applied @ 1.82 ltr/ 10 sqm) | sqm | 70.09 |
| 14.18 | Providing and applying synthetic/ acrylic plaster giving protective layer and decorative finish on any surface in approved design and shade as per manufacturer's specifications: | | - |
| 14.18.1 | 2.0mm thickness (average) having design scratched with special rollar. | sqm | 366.07 |
| 14.18.2 | 1.5mm thickness (average) having spray coat finish with special rollar. | sqm | 347.32 |
| 14.18.3 | 300 micron thickness (average) having superfine finish. | sqm | 265.18 |
| 14.19 | Finishing with epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including priming coat with epoxy primer, preparation of surface, etc. complete. | sqm | 116.96 |
| 14.20 | Applying priming coat on wood work with ready mixed primer. | sqm | 20.98 |
| 14.21 | Applying priming coat on steel work with red oxide zinc chromate primer. | sqm | 15.63 |
| 14.22 | Painting on new work (two or more coats) to give an even shade with: | | - |
| 14.22.1 | Satin synthetic enamel paint | sqm | 49.11 |
| 14.22.2 | Premium synthetic enamel paint | sqm | 41.96 |
| 14.22.3 | Aluminium paint | sqm | 52.23 |
| 14.22.4 | Black anti-corrosive bitumastic paint | sqm | 34.38 |
| 14.22.5 | Black Japan paint | sqm | 34.82 |

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| 14.23 | Painting on old work (one or more coats) to give an even shade with: | | - |
| 14.23.1 | Satin synthetic enamel paint | sqm | 31.25 |
| 14.23.2 | Premium synthetic enamel paint | sqm | 26.79 |
| 14.23.3 | Aluminium paint | sqm | 33.04 |
| 14.23.4 | Black anti-corrosive bitumastic paint | sqm | 22.32 |
| 14.23.5 | Black Japan paint | sqm | 22.77 |
| 14.24 | Extra for painting with spray painting machine instead of paint brush: | | - |
| 14.24.1 | On new work | sqm | 4.46 |
| 14.24.2 | On old work | sqm | 1.96 |
| 14.25 | Providing and laying French sprit polish on new wood work after preparing the surface by rubbing down smooth with sand papers, covering the knots, if visible, applying a coat of wood filler, cleaning the surface, applying 50 or more coats of French spirit polish till the surface gives high gloss. | sqm | 127.68 |
| 14.26 | Providing and laying French sprit polish on old wood work after preparing the surface by washing all dust, dirt and greasiness with detergent, rubbing down smooth with sand papers, covering the knots or undulations by applying a coat of wood filler if required, cleaning the surface, applying 5 or more coats of French spirit polish till the surface gives high gloss. | sqm | 53.13 |
| 14.27 | Providing and laying Melamine polish on new wood work (two or more coats) with spray machine after preparing surface by rubbing down smooth with sand papers, preparation of surface, applying 5 to 10 coats of French sprit polish, applying two coats of Melamine sealer and finally applying two coats of Melamine clear as per manufacturers specifications complete: | sqm | 418.75 |
| 14.28 | Providing and laying PU polish on new wood work (two or more coats) with spray machine after preparing surface by rubbing down smooth with sand papers, preparation of surface, applying 5 to 10 coats of French sprit polish, applying two coats of PU sealer and finally applying two coats of PU clear as per manufacturers specifications complete: | sqm | 585.71 |
| 14.29 | Applying priming coat with ready mixed primer on small articles not exceeding 0.10 sqm in area not in conjunction to similar primer painted work. | each | 3.84 |
| 14.30 | Painting small articles not exceeding 0.10 sqm of painted surface with superior quality enamel paint, not in conjunction to similar painted work. | each | 4.55 |
| 14.31 | Applying priming coat with ready mixed primer on surface upto 15 centimetre width or girth not in conjunction to similar painted work.. | each | 5.71 |
| 14.32 | Painting small articles upto 15 cm in width or girth with superior quality enamel paint, not in conjunction to similar painted work. | each | 6.79 |
| 14.33 | Applying priming coat with ready mixed primer on picture or curtain rail. | metre | 5.45 |
| 14.34 | Painting (one or more coats) on picture or curtain rail with superior quality enamel paint to give an even shade. | metre | 6.43 |
| 14.35 | Floor painting with superior quality enamel paint to give an even shade. | | - |
| 14.35.1 | On new work (two or more coats) | sqm | 38.39 |

| | | | |
|---|---|---|---|
| 14.35.2 | On old work (one or more coats) | sqm | 22.77 |
| 14.36 | Flooring polishing with superior quality wax polish of approved brand and manufacture. | sqm | 23.66 |
| 14.37 | Painting with black anticorrosive bitumastic paint on new work (two or more coats) on rain water, soil waste, vent pipes and fittings: | | - |
| 14.37.1 | 50 mm diameter pipes. | metre | 7.23 |
| 14.37.2 | 75 mm diameter pipes. | metre | 9.82 |
| 14.37.3 | 100 mm diameter pipes | metre | 12.95 |
| 14.37.4 | 150 mm diameter pipes | metre | 18.75 |
| 14.38 | Painting with black anticorrosive bitumastic paint on old work (one or more coats) on rain water, soil waste, vent pipes and fittings: | | - |
| 14.38.1 | 50 mm diameter pipes. | metre | 4.38 |
| 14.38.2 | 75 mm diameter pipes. | metre | 6.16 |
| 14.38.3 | 100 mm diameter pipes | metre | 7.95 |
| 14.38.4 | 150 mm diameter pipes | metre | 12.05 |
| 14.39 | Painting with aluminium paint on new work (two or more coats) on rain water, soil waste, vent pipes and fittings over and including a priming coat of red oxide zinc chromate primer: | | - |
| 14.39.1 | 50 mm diameter pipes. | metre | 12.95 |
| 14.39.2 | 75 mm diameter pipes. | metre | 18.30 |
| 14.39.3 | 100 mm diameter pipes | metre | 23.21 |
| 14.39.4 | 150 mm diameter pipes | metre | 34.82 |
| 14.40 | Painting with aluminium paint on old work (one or more coats) on rain water, soil waste, vent pipes and fittings | | - |
| 14.40.1 | 50 mm diameter pipes. | metre | 4.38 |
| 14.40.2 | 75 mm diameter pipes. | metre | 8.21 |
| 14.40.3 | 100 mm diameter pipes | metre | 7.95 |
| 14.40.4 | 150 mm diameter pipes | metre | 16.07 |
| 14.41 | Lettering with black Japan paint, per cm height. | per letter | 0.63 |
| 14.42 | Re-Lettering with black Japan paint, per cm height. | per letter | 0.45 |
| 14.43 | Coal tarring two coats on new work using 0.16 and 0.12 litre coal tar per sqm in the first and second coat respectively. | sqm | 18.30 |
| 14.44 | Removing white or colour wash by scrapping, sand papering and preparing the surface smooth including necessary repair to scratches etc. complete. | sqm | 3.84 |
| 14.45 | Removing dry or oil bound distemper by scraping sand papering and preparing the surfaces smooth including necessary repair to scratches etc. complete. | sqm | 4.64 |
| 14.46 | Removing old paint or polish by paint remover or blow lamp or any other means as approved including preparing the surface smooth after removing the paint. | sqm | 29.02 |
| 14.47 | Coal tarring one coat on old work using 0.12 litre coaltar per sqm | sqm | 27.23 |
| **15** | **PILE WORK** | | - |

| | | | |
|---|---|---|---|
| 15.1 | Providing, driving and installing driven cast-in-situ reinforced cement concrete piles of specified diameter and length below the pile cap in cement concrete M-35 grade, to carry safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of shoe and the length of pile to be embedded in the pile cap etc. all complete. (Length of pile for payment shall be measured from top of shoe to the bottom of pile cap): | | - |
| 15.1.1 | 400 mm dia piles | metre | 924.11 |
| 15.1.2 | 450 mm dia piles | metre | 1,133.93 |
| 15.1.3 | 500 mm dia piles | metre | 1,344.64 |
| 15.1.4 | 550 mm dia piles | metre | 1,344.64 |
| 15.1.5 | 750 mm dia piles. | metre | 2,047.32 |
| 15.2 | Boring, providing and installing bored cast-in-situ reinforced cement concrete pile of specified diameter and length below the pile cap in cement concrete M-35 grade, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with, bentonite solution and temporary casing of appropriate length for setting out and removal of same and the length of the pile to be embedded in the pile cap etc. all complete, including removal of excavated earth with all lifts and leads (Length of pile for payment shall be measured upto bottom of pile cap): | | - |
| 15.2.1 | 300 mm dia piles | metre | 854.46 |
| 15.2.2 | 400 mm dia piles | metre | 865.18 |
| 15.2.3 | 450 mm dia piles | metre | 1,131.25 |
| 15.2.4 | 500 mm dia. piles | metre | 1,300.00 |
| 15.2.5 | 600 mm dia piles | metre | 1,575.89 |
| 15.2.6 | 750 mm dia piles. | metre | 2,091.07 |
| 15.3 | Boring, Providing and installing cast in situ single under reamed piles of specified diameter and length below pile cap in cement concrete M-35 grade, to carry a safe working load not less than specified, excluding the cost of steel reinforcement but including the cost of boring with bentonite solution and the length of the pile to be embedded in pile cap etc. all complete. (Length of pile for payment shall be measured upto to the bottom of pile cap): | | - |
| 15.3.1 | 300 mm dia piles. | metre | 1,343.75 |
| 15.3.2 | 400 mm dia piles | metre | 1,373.21 |
| 15.3.3 | 450 mm dia piles | metre | 1,386.61 |
| 15.3.4 | 550 mm dia piles | metre | 1,389.29 |
| 15.4 | Extra for providing additional bulb in under reamed piles, under specified dia meter (Only the quantity of extra bulbs are to be paid). | | - |
| 15.4.1 | 300mm dia piles. | each | 976.79 |
| 15.4.2 | 400mm dia piles. | each | 986.61 |
| 15.4.3 | 450 mm dia piles. | each | 992.86 |
| 15.4.4 | 550 mm dia piles. | each | 1,042.86 |

| | | | |
|---|---|---|---|
| 15.5 | Boring, providing and installing cast in situ single under reamed piles of specified diameter and length below pile cap in cement concrete 1:1½:3 (1 cement : 1½ coarse sand : 3 graded stone aggregate 20mm nominal size), to carry a safe working load, excluding the cost of steel reinforcement but including the cost of boring with auger by manual means and making one bulb using suitable bulb enlarging tool by MANUAL MEANS with all instruments and arrangements required for boring true to vertical line etc. all complete. (Length of pile for payment shall be measured upto to the bottom of pile cap): | | - |
| 15.5.1 | 250 mm dia piles. | metre | 483.04 |
| 15.5.2 | 300 mm dia piles | metre | 692.86 |
| 15.6 | Extra for providing additional bulb in under reamed piles, under specified dia using necessary bulb enlarging tool and by MANUAL MEANS (Only the quantity of extra bulbs are to be paid): | | - |
| 15.6.1 | 250 mm dia piles. | each | 288.39 |
| 15.6.2 | 300 mm dia piles. | each | 325.89 |
| 15.7 | Providing, driving and installing driven Pre-cast reinforced cement concrete piles of specified diameter and length below the pile cap in M 35 cement concrete to carry safe working load not less than specified. With a central through preformed hole with M.S. black pipe of dia, 40mm for grouting with cement sand grouting of mix 1:2 (1 cement : 2 coarse sand) under sufficient positive pressure to ensure complete filling including centering, shuttering, driving and removing the steel casing pipe and lifting casing etc. complete but excluding the cost of steel reinforcement. (Length of pile for payment shall be measured from top of the shoe to the bottom of pile cap). | | - |
| 15.7.1 | 400 mm dia piles. | metre | 1,107.14 |
| 15.7.2 | 450 mm dia piles. | metre | 1,204.46 |
| 15.7.3 | 500 mm dia piles. | metre | 1,129.46 |
| 15.7.4 | 550 mm dia piles. | metre | 1,142.86 |
| 15.7.5 | 750 mm dia piles. | metre | 1,240.18 |
| 15.8 | Vertical load testing of piles in accordance with IS 2911 (Part IV) including installation of loading platform and preparation of pile head or construction of test cap and dismantling of test cap after test etc. complete as per specification & the direction of Engineer in-charge. | | - |
| 15.8.1 | Single pile upto 50 tonne capacity | | - |
| 15.8.2 | Initial test. | per test | 34,237.50 |
| 15.8.3 | Routine test | per test | 15,468.75 |
| 15.8.4 | Single pile above 50 tonne and upto 100 tonne capacity | | - |
| 15.8.5 | Initial test | per test | 41,559.82 |
| 15.8.6 | Routine test. | per test | 23,718.75 |
| 15.8.7 | Group of two or more piles upto 50 tonne capacity | | - |
| 15.8.8 | Initial test | per test | 50,016.07 |
| 15.8.9 | Routine test | per test | 30,422.32 |
| 15.9 | Cyclic vertical load testing of pile in accordance with IS Code of practice IS : 2911 (part IV) including preparation of pile head etc for. | | - |
| 15.9.1 | Single pile. | | - |
| 15.9.2 | Upto 50 tonne capacity pile. | per test | 15,468.75 |
| 15.9.3 | Above 50 tonne and upto 100 tonne capacity pile. | per test | 23,718.75 |
| 15.9.4 | Group of two piles. | | - |
| 15.9.5 | Upto 50 tonne capacity each . | per test. | 30,422.32 |

| | | | |
|---|---|---|---|
| 15.10 | Lateral load testing of single pile in accordance with IS Code of practice IS : 2911 (Part IV) for determining safe allowable lateral load on pile : | | - |
| 15.10.1 | Upto 50 tonne capacity pile. | per test | 15,468.75 |
| 15.10.2 | Above 50 tonne and upto 100 tonne capacity pile. | per test | 24,234.82 |
| **16.** | **FIRE FIGHTING** | | - |
| | Dry Power Extinguisher Stored Pressure Type | No. | 6,250.00 |

| **B** | **Water Distribution Network** | | | | |
|---|---|---|---|---|---|
| **B.1** | **UPVC Pipes** | | | | |
| **SN** | **Particulars** | **Unit** | **Rate For Supply** | **Rate For laying/ commissioning** | **Total Rate** |
| | Trenching work with proper back filling for Distribution of pipe lines : | Mtr | - | 100.00 | 100.00 |
| | Supply & Laying of UPVC Pipe of 06 kg/cm2 pressure for following size: | | - | - | - |
| | UPVC Pipe Line of 75 MM | Mtr | 127.98 | 3.00 | 130.98 |
| | UPVC Pipe Line of 90 MM | Mtr | 182.87 | 4.00 | 186.87 |
| | UPVC Pipe Line of 110 MM | Mtr | 267.97 | 5.00 | 272.97 |
| | UPVC Pipe Line of 140 MM | Mtr | 442.32 | 9.00 | 451.32 |
| | UPVC Pipe Line of 160 MM | Mtr | 572.68 | 11.00 | 583.68 |
| | UPVC Pipe Line of 180 MM | Mtr | 727.41 | 15.00 | 742.41 |
| | UPVC Pipe Line of 200 MM | Mtr | 921.37 | 18.00 | 939.37 |
| | UPVC Pipe Line of 225 MM | Mtr | 1,167.64 | 23.00 | 1,190.64 |
| | UPVC Pipe Line of 250 MM | Mtr | 1,451.65 | 29.00 | 1,480.65 |
| | UPVC Pipe Line of 280 MM | Mtr | 1,647.98 | 33.00 | 1,680.98 |
| | UPVC Pipe Line of 315 MM | Mtr | 2071.00 | 43.00 | 2114.00 |
| | Supply & Fixing of Position gate valve/ Drain valvefor UPVC pipe line including all accessories & materials of following size of dia : | | - | - | - |
| | 110 mm | No. | 2,012.67 | 40.00 | 2,052.67 |
| | 140 mm | No. | 2,667.60 | 53.00 | 2,720.60 |
| | 160 mm | No. | 3,320.82 | 66.00 | 3,386.82 |
| | 180 mm | No. | 3,986.87 | 80.00 | 4,066.87 |
| | 200 mm | No. | 4,987.22 | 100.00 | 5,087.22 |
| | 250 mm | No. | 6,673.35 | 133.00 | 6,806.35 |
| | Supply & Fixing of Position Ball valve for UPVC pipe line including all accessories & materials of following size of dia : | | - | - | - |
| | 75 mm | No. | 308.75 | 6.00 | 314.75 |
| | Supply & Fixing of Non Return Valve for UPVC pipe line including all accessories & materials of following size of dia : | | - | - | - |
| | 140 mm | No. | 7,823.25 | 156.00 | 7,979.25 |
| | 150 mm | No. | 11,542.50 | 231.00 | 11,773.50 |
| | 160 mm | No. | 11,542.50 | 231.00 | 11,773.50 |
| | 180 mm | No. | 19,280.25 | 386.00 | 19,666.25 |

| | | | | | |
|---|---|---|---|---|---|
| | 200 mm | No. | 19,280.25 | 386.00 | 19,666.25 |
| | 250 mm | No. | 30,096.00 | 602.00 | 30,698.00 |
| | 280 mm | No. | 35,200.00 | 704.00 | 35,904.00 |
| | Supply & Fixing of Air release Valve with UPVC service saddle & 1 mm long 25 mm dia GI Pipe including all material & accessaries for following size of dia : | | - | - | - |
| | 110 x 25 mm (If required) | No. | 1,314.14 | 26.00 | 1,340.14 |
| | 140 X 25 mm (If required) | No. | 1,356.03 | 27.00 | 1,383.03 |
| | 160 X 25 mm (If required) | No. | 1,418.45 | 28.00 | 1,446.45 |
| | 180 X 25 mm | No. | 1,541.57 | 31.00 | 1,572.57 |
| | 200 X 25 mm | No. | 1,644.17 | 33.00 | 1,677.17 |
| | 225 X 25 mm | No. | 1,973.34 | 39.00 | 2,012.34 |
| | Civil work-thurst blocks, valve chambers | Per Hect. | 1,900.00 | - | 1,900.00 |

**B.1 HDPE Pipes**

1 High Density polyethylene pipes for Water Supply shall be as per IS : 4984

2 Rubber sealing rings for gas mains, water mains and sewers shall be as per IS : 5382.

3 Laying & jointing of polyethylene (PE) Pipes shall be as per IS : 7634

4 Colour

4.1 The colour of the pipe shall be black for the purpose of identification of the pipes covered in this standard. Each pipe shall contain minimum three equi-spaced longitudinal stripes of width 3 mm (Min) in blue colour. These stripes shall be more than 0.2 mm in depth. The material of the stripes shall be of the same type of resin, as used in the base compound for the pipe.

5 Length of straight Pipe & marking on pipe

5.1 The length of straight pipe used shall be more than 6 m or as agreed by Engineer in charge. Short lengths of 3 meter (minimum) up to a Maximum of 10 % of the total supply may be permitted.

5.2 Each straight length of pipe shall be clearly marked in indelible ink/paint on either end and for coil at both ends or hot embossed on white base every meter throughout the length of pipe/coil with the following information:

5.2.1 Manufacturer□s name/Trade-mark,

5.2.2 Designation of pipe

5.2.3 Lot No./Batch No.

5.2.4 BIS certification marking on each pipe.

6 Appearance

Pipe shall be free from all defect including indentation, delaminating, bubbles, pinholes,cracks, pits, blisters, foreign inclusion that due to their nature degree or extent free of scouring, inside diameter from that obtained on adjacent unaffected portions of the surface. The pipecavities, bulges, dents, ridges and other defects that result in a variation ofdetrimentallyaffect the strength and Serviceability of the pipe. The pipe shall be as uniform as commercially practicable in colour opacity, density and other physical properties as per relevant IS code or equivalent International Code. The inside surface of each pipe shall be ends shall be cut clearly and square to the axis of the pipe within the tolerance as per IS:4984

7 Handling, Transportation storage and Lowering of pipes.

• If transportation of HDPE pipes from a distance greater than 300km than pipes shall be received only when bare coils of pipe have been wrapped with Hessian cloth.

• The truck for transportation of the PE pipes shall be exclusively used for PE pipes only with no other material loaded-especially no metallic, glass and wooden items. The truck shall not have sharp edges that can damage the pipe.

• At the time of opening coils it must be remembered that the coils are under tension and must be open in control manner.

• Straight length should be stored on horizontal racks giving continuous support.

• Loss/damages during transit, handling, storage will be to the contractor□s account.

8 Fittings and specials :

All HDPE fittings/specials shall be fabricated or injection moulded at factory as per IS: 8360 (Part-I & Part-III) and as per IS: 8008 (Part-I to Part-IX). Fittings will be butt welded on the pipes or other fittings by use of heat fusion.

9 Test to Establish Perfectibility/portability of work Specimen of pipe shall be tested to establish the suitability for use in carrying potable water

(i) Smell of the extract

(ii) Clarity of the colour of the extract

(iii) Acidity and Alkality

(iv) Global migration UV absorbing material Heavy metals

(v) Unreacted monomers (styrens) and biological tests

10 Hydraulic Test

After laying the pipe hydraulic test shall be done to Conform the quality of work and material. There should not be any signs of localized swelling, leakage or weeping.

11 Laying of pipes and fittings/specials includes all precautions to guard against possible damage to the existing structure/pipe lines, cables etc., taking precautions to prevent dirt from entering the pipe ends, lowering and laying pipes and specials in the trenches with specials arrangement such as cranes, tripods with chain pulley block, use of slings of canvas etc. to fit the ends of pipes and fittings/ specials to lift and lower the same. Inspection of pipes and fittings for defects by striking with a light hammer while suspended. Laying of pipes perfectly true in alignment and to gradient etc.

12 Measurement

The net length of fixed pipe shall be measured in running meters correct to 10mm. The portion of the pipe inside the joints shall not be included in the length of pipe work. Specials shall be excluded and measured and paid separately under the relevant item.

13 Rates :
The rate shall include the cost of the material and labour involve in all operations described in the item.

| S.No | Particulars of Items | Unit | Rate without GST (in Rs.) | | |
|---|---|---|---|---|---|
| 10.1 | Providing, laying, Jointing & field testing of High Density Polyethylene pipes, (HDPE) Conforming to IS 4984/ 14151/12786//13488 with necessary jointing material like mechanical connector or jointing pipes by heating to the ends of pipes with the help of Teflon coated electric mirror/ heater to the required temperature and then pressing the ends together against each other, to form a monolithic & leak proof joint by thermosetting process. It may be required to be done with Jacks/Hydraulic Jacks/ But fusion machine. (50mm & above fusion jointed & below 50mm mechanical jointed) PE-100 | | 6 Kg/sq.cm | 8 Kg/sq.cm | 10 Kg/sq.cm |
| 1 | 20 mm dia | RM | 28.00 | 29.00 | 30.00 |
| 2 | 25 mm dia | RM | 33.00 | 35.00 | 38.00 |
| 3 | 32 mm dia | RM | 42.00 | 42.00 | 47.00 |
| 4 | 40 mm dia | RM | 53.00 | 59.00 | 69.00 |
| 5 | 50 mm dia | RM | 69.00 | 85.00 | 100.00 |
| 6 | 63 mm dia | RM | 106.00 | 132.00 | 157.00 |
| 7 | 75 mm dia | RM | 151.00 | 186.00 | 222.00 |
| 8 | 90 mm dia | RM | 208.00 | 260.00 | 312.00 |
| 9 | 110 mm dia | RM | 297.00 | 383.00 | 458.00 |
| 10 | 125 mm dia | RM | 387.00 | 492.00 | 588.00 |
| 11 | 140 mm dia | RM | 481.00 | 611.00 | 731.00 |
| 12 | 160 mm dia | RM | 627.00 | 798.00 | 957.00 |
| 13 | 180 mm dia | RM | 785.00 | 1002.00 | 1219.00 |
| 14 | 200 mm dia | RM | 970.00 | 1241.00 | 1497.00 |
| 15 | 225 mm dia | RM | 1227.00 | 1566.00 | 1885.00 |
| 16 | 250 mm dia | RM | 1504.00 | 1927.00 | 2319.00 |
| 17 | 280 mm dia | RM | 1879.00 | 2409.00 | 2897.00 |
| 18 | 315 mm dia | RM | 2371.00 | 3038.00 | 3663.00 |
| 19 | 355 mm dia | RM | 3025.00 | 3873.00 | 4693.00 |
| 20 | 400 mm dia | RM | 3904.00 | 5012.00 | 6073.00 |
| 21 | 450 mm dia | RM | 4944.00 | 6353.00 | 7665.00 |
| 22 | 500 mm dia | RM | 6110.00 | 7835.00 | 9469.00 |
| 23 | 560 mm dia | RM | 7644.00 | 9831.00 | 11857.00 |
| 24 | 630 mm dia | RM | 9660.00 | 12420.00 | 15003.00 |
| 25 | 710 mm dia | RM | 11680.00 | 15013.00 | 18153.00 |

Providing and laying Bend 90' Conforming to IS specifications.

| S.No | Particulars of Items | Unit | Rate without GST (in Rs.) | | |
|---|---|---|---|---|---|
| | | | 6 Kg/sq.cm | 8 Kg/sq.cm | 10 Kg/sq.cm |
| 1 | 20 mm dia | Each | 22.00 | 24.00 | 25.00 |
| 2 | 25 mm dia | Each | 25.00 | 27.00 | 28.00 |
| 3 | 32 mm dia | Each | 32.00 | 33.00 | 35.00 |
| 4 | 40 mm dia | Each | 36.00 | 38.00 | 39.00 |
| 5 | 50 mm dia | Each | 47.00 | 51.00 | 56.00 |
| 6 | 63 mm dia | Each | 64.00 | 69.00 | 92.00 |
| 7 | 75 mm dia | Each | 99.00 | 103.00 | 117.00 |
| 8 | 90 mm dia | Each | 153.00 | 164.00 | 188.00 |
| 9 | 110 mm dia | Each | 203.00 | 238.00 | 254.00 |
| 10 | 125 mm dia | Each | 292.00 | 279.00 | 427.00 |
| 11 | 140 mm dia | Each | 397.00 | 495.00 | 585.00 |
| 12 | 160 mm dia | Each | 569.00 | 715.00 | 850.00 |
| 13 | 180 mm dia | Each | 786.00 | 993.00 | 1191.00 |
| 14 | 200 mm dia | Each | 1053.00 | 1338.00 | 1608.00 |
| 15 | 225 mm dia | Each | 1481.00 | 1883.00 | 2261.00 |
| 16 | 250 mm dia | Each | 1999.00 | 2557.00 | 3074.00 |
| 17 | 280 mm dia | Each | 2785.00 | 3567.00 | 4287.00 |
| 18 | 315 mm dia | Each | 3942.00 | 5050.00 | 6087.00 |
| 19 | 355 mm dia | Each | 5594.00 | 7167.00 | 8687.00 |
| 20 | 400 mm dia | Each | 8128.00 | 10441.00 | 12656.00 |
| 21 | 450 mm dia | Each | 11528.00 | 14838.00 | 17919.00 |
| 22 | 500 mm dia | Each | 15823.00 | 20327.00 | 24592.00 |
| 23 | 560 mm dia | Each | 22120.00 | 28511.00 | 34433.00 |
| 24 | 630 mm dia | Each | 31462.00 | 40542.00 | 49038.00 |
| 25 | 710 mm dia | Each | 44847.00 | 57811.00 | 70100.00 |

Providing and laying Bend 45' Conforming to IS specifications.

| S.No | Particulars of Items | Unit | Rate without GST (in Rs.) | | |
|---|---|---|---|---|---|
| | | | 6 Kg/sq.cm | 8 Kg/sq.cm | 10 Kg/sq.cm |
| 1 | 20 mm dia | Each | 22.00 | 24.00 | 25.00 |
| 2 | 25 mm dia | Each | 24.00 | 25.00 | 27.00 |
| 3 | 32 mm dia | Each | 25.00 | 27.00 | 31.00 |
| 4 | 40 mm dia | Each | 30.00 | 32.00 | 40.00 |
| 5 | 50 mm dia | Each | 42.00 | 42.00 | 55.00 |
| 6 | 63 mm dia | Each | 74.00 | 74.00 | 97.00 |
| 7 | 75 mm dia | Each | 113.00 | 113.00 | 149.00 |
| 8 | 90 mm dia | Each | 163.00 | 163.00 | 219.00 |
| 9 | 110 mm dia | Each | 240.00 | 240.00 | 349.00 |
| 10 | 125 mm dia | Each | 258.00 | 335.00 | 514.00 |
| 11 | 140 mm dia | Each | 348.00 | 488.00 | 735.00 |
| 12 | 160 mm dia | Each | 497.00 | 704.00 | 1054.00 |
| 13 | 180 mm dia | Each | 684.00 | 953.00 | 1446.00 |
| 14 | 200 mm dia | Each | 914.00 | 1257.00 | 1916.00 |
| 15 | 225 mm dia | Each | 1279.00 | 1772.00 | 2718.00 |

| | | | | | |
|---|---|---|---|---|---|
| 16 | 250 mm dia | Each | 1729.00 | 2393.00 | 3661.00 |
| 17 | 280 mm dia | Each | 2405.00 | 3281.00 | 4950.00 |
| 18 | 315 mm dia | Each | 3396.00 | 5035.00 | 7579.00 |
| 19 | 355 mm dia | Each | 4580.00 | 7244.00 | 10936.00 |
| 20 | 400 mm dia | Each | 5927.00 | 9881.00 | 15772.00 |
| 21 | 450 mm dia | Each | 7564.00 | 12960.00 | 20259.00 |
| 22 | 500 mm dia | Each | 9325.00 | 18130.00 | 28486.00 |
| 23 | 560 mm dia | Each | 11672.00 | 25136.00 | 28691.00 |
| 24 | 630 mm dia | Each | 14740.00 | 32233.00 | 29102.00 |
| 25 | 710 mm dia | Each | 15095.00 | 36345.00 | 29460.00 |

Providing and laying Equal Tee Conforming to IS specifications.

| S.No | Particulars of Items | Unit | Rate without GST (in Rs.) | | |
|---|---|---|---|---|---|
| | | | 6 Kg/sq.cm | 8 Kg/sq.cm | 10 Kg/sq.cm |
| 1 | 20 mm dia | Each | 24.00 | 25.00 | 26.00 |
| 2 | 25 mm dia | Each | 31.00 | 33.00 | 34.00 |
| 3 | 32 mm dia | Each | 32.00 | 35.00 | 36.00 |
| 4 | 40 mm dia | Each | 36.00 | 39.00 | 39.00 |
| 5 | 50 mm dia | Each | 48.00 | 53.00 | 63.00 |
| 6 | 63 mm dia | Each | 79.00 | 87.00 | 97.00 |
| 7 | 75 mm dia | Each | 131.00 | 136.00 | 167.00 |
| 8 | 90 mm dia | Each | 232.00 | 236.00 | 286.00 |
| 9 | 110 mm dia | Each | 339.00 | 350.00 | 409.00 |
| 10 | 125 mm dia | Each | 375.00 | 468.00 | 553.00 |
| 11 | 140 mm dia | Each | 511.00 | 641.00 | 759.00 |
| 12 | 160 mm dia | Each | 738.00 | 932.00 | 1111.00 |
| 13 | 180 mm dia | Each | 1026.00 | 1302.00 | 1563.00 |
| 14 | 200 mm dia | Each | 1382.00 | 1760.00 | 2119.00 |
| 15 | 225 mm dia | Each | 1953.00 | 2489.00 | 2990.00 |
| 16 | 250 mm dia | Each | 2639.00 | 3378.00 | 4062.00 |
| 17 | 280 mm dia | Each | 3685.00 | 4722.00 | 5675.00 |
| 18 | 315 mm dia | Each | 5228.00 | 6699.00 | 8073.00 |
| 19 | 355 mm dia | Each | 7433.00 | 9521.00 | 11535.00 |
| 20 | 400 mm dia | Each | 10792.00 | 13858.00 | 16786.00 |
| 21 | 450 mm dia | Each | 14647.00 | 18840.00 | 22732.00 |
| 22 | 500 mm dia | Each | 21028.00 | 26997.00 | 32634.00 |
| 23 | 560 mm dia | Each | 29426.00 | 37900.00 | 45731.00 |
| 24 | 630 mm dia | Each | 41856.00 | 53890.00 | 65122.00 |
| 25 | 710 mm dia | Each | 59708.00 | 76899.00 | 93151.00 |

Providing and laying Pipe end Conforming to IS specifications.

| S.No | Particulars of Items | Unit | Rate without GST (in Rs.) | | |
|---|---|---|---|---|---|
| | | | 6 Kg/sq.cm | 8 Kg/sq.cm | 10 Kg/sq.cm |
| 1 | 20 mm dia | Each | 33.00 | 35.00 | 36.00 |
| 2 | 25 mm dia | Each | 35.00 | 36.00 | 39.00 |
| 3 | 32 mm dia | Each | 36.00 | 39.00 | 41.00 |
| 4 | 40 mm dia | Each | 39.00 | 43.00 | 44.00 |
| 5 | 50 mm dia | Each | 46.00 | 47.00 | 49.00 |
| 6 | 63 mm dia | Each | 57.00 | 58.00 | 60.00 |
| 7 | 75 mm dia | Each | 73.00 | 80.00 | 80.00 |
| 8 | 90 mm dia | Each | 106.00 | 120.00 | 120.00 |
| 9 | 110 mm dia | Each | 136.00 | 158.00 | 158.00 |
| 10 | 125 mm dia | Each | 209.00 | 238.00 | 238.00 |
| 11 | 140 mm dia | Each | 264.00 | 301.00 | 301.00 |
| 12 | 160 mm dia | Each | 269.00 | 316.00 | 316.00 |
| 13 | 180 mm dia | Each | 415.00 | 475.00 | 475.00 |
| 14 | 200 mm dia | Each | 411.00 | 489.00 | 485.00 |
| 15 | 225 mm dia | Each | 428.00 | 521.00 | 521.00 |
| 16 | 250 mm dia | Each | 699.00 | 714.00 | 814.00 |
| 17 | 280 mm dia | Each | 648.00 | 792.00 | 792.00 |
| 18 | 315 mm dia | Each | 973.00 | 1201.00 | 1201.00 |
| 19 | 355 mm dia | Each | 1341.00 | 1630.00 | 1630.00 |
| 20 | 400 mm dia | Each | 1668.00 | 2036.00 | 2036.00 |
| 21 | 450 mm dia | Each | 1972.00 | 2437.00 | 2437.00 |
| 22 | 500 mm dia | Each | 2486.00 | 3060.00 | 3060.00 |
| 23 | 560 mm dia | Each | 3535.00 | 4255.00 | 4255.00 |
| 24 | 630 mm dia | Each | 3031.00 | 3942.00 | 3942.00 |
| 25 | 710 mm dia | Each | 4654.00 | 6045.00 | 6045.00 |

| | | Unit | STEP I | STEP II | STEP III |
|---|---|---|---|---|---|
| 1 | 20 mm dia | Each | - | - | - |
| 2 | 25 mm dia | Each | 36.00 | - | - |
| 3 | 32 mm dia | Each | 42.00 | 42.00 | - |
| 4 | 40 mm dia | Each | 47.00 | 47.00 | 52.00 |
| 5 | 50 mm dia | Each | 58.00 | 59.00 | 61.00 |
| 6 | 63 mm dia | Each | 70.00 | 71.00 | 72.00 |
| 7 | 75 mm dia | Each | 89.00 | 91.00 | 96.00 |
| 8 | 90 mm dia | Each | 97.00 | 102.00 | 107.00 |
| 9 | 110 mm dia | Each | 96.00 | 119.00 | 116.00 |
| 10 | 125 mm dia | Each | 103.00 | 137.00 | 131.00 |
| 11 | 140 mm dia | Each | 122.00 | 152.00 | 155.00 |
| 12 | 160 mm dia | Each | 158.00 | 198.00 | 190.00 |
| 13 | 180 mm dia | Each | 186.00 | 253.00 | 235.00 |
| 14 | 200 mm dia | Each | 215.00 | 294.00 | 286.00 |
| 15 | 225 mm dia | Each | 279.00 | 379.00 | 361.00 |
| 16 | 250 mm dia | Each | 326.00 | 367.00 | 439.00 |
| 17 | 280 mm dia | Each | 431.00 | 459.00 | 462.00 |

| | | | | | |
|---|---|---|---|---|---|
| 18 | 315 mm dia | Each | 570.00 | 556.00 | 602.00 |
| 19 | 355 mm dia | Each | 811.00 | 778.00 | 949.00 |
| 20 | 400 mm dia | Each | 856.00 | 971.00 | 1105.00 |
| 21 | 450 mm dia | Each | 1130.00 | 1275.00 | 3915.00 |
| 22 | 500 mm dia | Each | 1377.00 | 1614.00 | 4663.00 |
| 23 | 560 mm dia | Each | 1975.00 | 2078.00 | 9150.00 |
| 24 | 630 mm dia | Each | 2342.00 | 2443.00 | 9775.00 |
| 25 | 710 mm dia | Each | 3058.00 | 3151.00 | 19875.00 |

| | | Unit | STEP I | STEP II | STEP III |
|---|---|---|---|---|---|
| 1 | 20 mm dia | Each | - | - | - |
| 2 | 25 mm dia | Each | 37.00 | - | - |
| 3 | 32 mm dia | Each | 42.00 | 42.00 | - |
| 4 | 40 mm dia | Each | 48.00 | 48.00 | 53.00 |
| 5 | 50 mm dia | Each | 58.00 | 60.00 | 63.00 |
| 6 | 63 mm dia | Each | 80.00 | 82.00 | 85.00 |
| 7 | 75 mm dia | Each | 95.00 | 99.00 | 103.00 |
| 8 | 90 mm dia | Each | 104.00 | 110.00 | 116.00 |
| 9 | 110 mm dia | Each | 95.00 | 112.00 | 131.00 |
| 10 | 125 mm dia | Each | 114.00 | 147.00 | 147.00 |
| 11 | 140 mm dia | Each | 143.00 | 181.00 | 187.00 |
| 12 | 160 mm dia | Each | 178.00 | 235.00 | 241.00 |
| 13 | 180 mm dia | Each | 209.00 | 286.00 | 273.00 |
| 14 | 200 mm dia | Each | 258.00 | 354.00 | 340.00 |
| 15 | 225 mm dia | Each | 317.00 | 390.00 | 421.00 |
| 16 | 250 mm dia | Each | 413.00 | 437.00 | 471.00 |
| 17 | 280 mm dia | Each | 527.00 | 577.00 | 582.00 |
| 18 | 315 mm dia | Each | 732.00 | 757.00 | 826.00 |
| 19 | 355 mm dia | Each | 869.00 | 918.00 | 1079.00 |
| 20 | 400 mm dia | Each | 1092.00 | 1236.00 | 1323.00 |
| 21 | 450 mm dia | Each | 1369.00 | 1523.00 | 1509.00 |
| 22 | 500 mm dia | Each | 1787.00 | 1963.00 | 1982.00 |
| 23 | 560 mm dia | Each | 2287.00 | 2364.00 | 2221.00 |
| 24 | 630 mm dia | Each | 2547.00 | 2627.00 | 2551.00 |
| 25 | 710 mm dia | Each | 2583.00 | 2802.00 | 2742.00 |

Providing and laying Reducer 10 kg/sq.cm : Conforming to IS specifications.

| | | Unit | STEP I | STEP II | STEP III |
|---|---|---|---|---|---|
| 1 | 20 mm dia | Each | - | - | - |
| 2 | 25 mm dia | Each | 42.00 | - | - |
| 3 | 32 mm dia | Each | 47.00 | 47.00 | - |
| 4 | 40 mm dia | Each | 53.00 | 53.00 | 58.00 |
| 5 | 50 mm dia | Each | 62.00 | 64.00 | 66.00 |
| 6 | 63 mm dia | Each | 75.00 | 78.00 | 83.00 |
| 7 | 75 mm dia | Each | 94.00 | 99.00 | 104.00 |
| 8 | 90 mm dia | Each | 105.00 | 114.00 | 116.00 |
| 9 | 110 mm dia | Each | 110.00 | 131.00 | 121.00 |
| 10 | 125 mm dia | Each | 124.00 | 148.00 | 142.00 |
| 11 | 140 mm dia | Each | 131.00 | 164.00 | 168.00 |
| 12 | 160 mm dia | Each | 170.00 | 215.00 | 206.00 |

| | | | | | |
|---|---|---|---|---|---|
| 13 | 180 mm dia | Each | 201.00 | 275.00 | 256.00 |
| 14 | 200 mm dia | Each | 234.00 | 322.00 | 314.00 |
| 15 | 225 mm dia | Each | 305.00 | 418.00 | 397.00 |
| 16 | 250 mm dia | Each | 358.00 | 404.00 | 485.00 |
| 17 | 280 mm dia | Each | 505.00 | 514.00 | 517.00 |
| 18 | 315 mm dia | Each | 631.00 | 696.00 | 709.00 |
| 19 | 355 mm dia | Each | 900.00 | 864.00 | 1056.00 |
| 20 | 400 mm dia | Each | 948.00 | 1078.00 | 1229.00 |
| 21 | 450 mm dia | Each | 1341.00 | 1516.00 | 1554.00 |
| 22 | 500 mm dia | Each | 1636.00 | 1795.00 | 1858.00 |
| 23 | 560 mm dia | Each | 2202.00 | 2317.00 | 2350.00 |
| 24 | 630 mm dia | Each | 2612.00 | 2662.00 | 2772.00 |
| 25 | 710 mm dia | Each | 2762.00 | 2823.00 | 2898.00 |

Providing butt fusion wlded joint/jointing by heating to the ends with the help of Teflon coated electric mirror/heater ends together etc. by thermosetting process to HDPE Pipe and below 50mm mechanical jointed)10kg) (50mm & above fusion jointed &8kg,specials. (6kg,

| | | Unit | Rate without GST (In Rs.) |
|---|---|---|---|
| 1 | 20 mm dia | Each | 50.00 |
| 2 | 25 mm dia | Each | 50.00 |
| 3 | 32 mm dia | Each | 55.00 |
| 4 | 40 mm dia | Each | 68.00 |
| 5 | 50 mm dia | Each | 62.00 |
| 6 | 63 mm dia | Each | 81.00 |
| 7 | 75 mm dia | Each | 102.00 |
| 8 | 90 mm dia | Each | 113.00 |
| 9 | 110 mm dia | Each | 124.00 |
| 10 | 125 mm dia | Each | 150.00 |
| 11 | 140 mm dia | Each | 158.00 |
| 12 | 160 mm dia | Each | 173.00 |
| 13 | 180 mm dia | Each | 181.00 |
| 14 | 200 mm dia | Each | 193.00 |
| 15 | 225 mm dia | Each | 214.00 |
| 16 | 250 mm dia | Each | 253.00 |
| 17 | 280 mm dia | Each | 270.00 |
| 18 | 315 mm dia | Each | 295.00 |
| 19 | 355 mm dia | Each | 330.00 |
| 20 | 400 mm dia | Each | 386.00 |
| 21 | 450 mm dia | Each | 516.00 |
| 22 | 500 mm dia | Each | 618.00 |
| 23 | 560 mm dia | Each | 760.00 |
| 24 | 630 mm dia | Each | 860.00 |
| 25 | 710 mm dia | Each | 988.00 |

10.10 Providing and laying End Cap Conforming to IS specifications.

| | | | 6 Kg/sq.cm | 8 Kg/sq.cm | 10 Kg/sq.cm |
|---|---|---|---|---|---|
| 1 | 20 mm dia | Each | 34.00 | 34.00 | 34.00 |
| 2 | 25 mm dia | Each | 34.00 | 34.00 | 36.00 |

| | | | | | |
|---|---|---|---|---|---|
| 3 | 32 mm dia | Each | 36.00 | 36.00 | 37.00 |
| 4 | 40 mm dia | Each | 36.00 | 37.00 | 40.00 |
| 5 | 50 mm dia | Each | 43.00 | 47.00 | 49.00 |
| 6 | 63 mm dia | Each | 58.00 | 58.00 | 62.00 |
| 7 | 75 mm dia | Each | 72.00 | 75.00 | 79.00 |
| 8 | 90 mm dia | Each | 81.00 | 82.00 | 87.00 |
| 9 | 110 mm dia | Each | 72.00 | 85.00 | 89.00 |
| 10 | 125 mm dia | Each | 102.00 | 140.00 | 143.00 |
| 11 | 140 mm dia | Each | 147.00 | 167.00 | 171.00 |
| 12 | 160 mm dia | Each | 175.00 | 244.00 | 253.00 |
| 13 | 180 mm dia | Each | 252.00 | 293.00 | 304.00 |
| 14 | 200 mm dia | Each | 301.00 | 350.00 | 364.00 |
| 15 | 225 mm dia | Each | 358.00 | 358.00 | 476.00 |
| 16 | 250 mm dia | Each | 473.00 | 548.00 | 573.00 |
| 17 | 280 mm dia | Each | 568.00 | 631.00 | 908.00 |
| 18 | 315 mm dia | Each | 719.00 | 789.00 | 1143.00 |
| 19 | 355 mm dia | Each | 934.00 | 1073.00 | 1958.00 |
| 20 | 400 mm dia | Each | 1442.00 | 1627.00 | 2514.00 |
| 21 | 450 mm dia | Each | 2047.00 | 2201.00 | 4158.00 |
| 22 | 500 mm dia | Each | 3031.00 | 3259.00 | 4876.00 |
| 23 | 560 mm dia | Each | 4282.00 | 4553.00 | 7125.00 |
| 24 | 630 mm dia | Each | 6039.00 | 6689.00 | 8727.00 |
| 25 | 710 mm dia | Each | 6319.00 | 7364.00 | 10072.00 |

Providing and Supplying standard lengths Polyethylene pipes with necessary jointing material PE-100

| **For 6kg/sq,cm** | **Unit** | **Rate Without GST (In Rs.)** |
|---|---|---|
| 63mm | RM | 92.00 |
| 75mm | RM | 133.00 |
| 90mm | RM | 187.00 |
| 110mm | RM | 276.00 |
| 125mm | RM | 361.00 |
| 140mm | RM | 454.00 |
| 160mm | RM | 597.00 |
| 180mm | RM | 753.00 |
| 200mm | RM | 936.00 |
| 225mm | RM | 1,189.00 |
| 250mm | RM | 1,460.00 |
| 280mm | RM | 1,831.00 |
| 315mm | RM | 2,319.00 |
| 355mm | RM | 2,967.00 |
| 400mm | RM | 3,836.00 |
| 450 mm | RM | 4,853.00 |
| 500 mm | RM | 6,000.00 |
| 560 mm | RM | 7,510.00 |
| 630 mm | RM | 9,508.00 |
| 710 mm | RM | 11,506.00 |
| For 8kg/sq,cm | | - |
| 63mm | RM | 118.00 |
| 75mm | RM | 168.00 |

| | | |
|---|---|---|
| 90mm | RM | 241.00 |
| 110mm | RM | 361.00 |
| 125mm | RM | 466.00 |
| 140mm | RM | 584.00 |
| 160mm | RM | 768.00 |
| 180mm | RM | 969.00 |
| 200mm | RM | 1,207.00 |
| 225mm | RM | 1,529.00 |
| 250mm | RM | 1,882.00 |
| 280mm | RM | 2,361.00 |
| 315mm | RM | 2,986.00 |
| 355mm | RM | 3,815.00 |
| 400mm | RM | 4,943.00 |
| 450 mm | RM | 6,262.00 |
| 500 mm | RM | 7,725.00 |
| 560 mm | RM | 9,697.00 |
| 630 mm | RM | 12,268.00 |
| 710 mm | RM | 14,839.00 |
| For 10kg/sq,cm | | - |
| 63mm | RM | 143.00 |
| 75mm | RM | 204.00 |
| 90mm | RM | 292.00 |
| 110mm | RM | 436.00 |
| 125mm | RM | 562.00 |
| 140mm | RM | 703.00 |
| 160mm | RM | 926.00 |
| 180mm | RM | 1,186.00 |
| 200mm | RM | 1,464.00 |
| 225mm | RM | 1,847.00 |
| 250mm | RM | 2,275.00 |
| 280mm | RM | 2,850.00 |
| 315mm | RM | 3,611.00 |
| 355mm | RM | 4,635.00 |
| 400mm | RM | 6,004.00 |
| 450 mm | RM | 7,575.00 |
| 500 mm | RM | 9,358.00 |
| 560 mm | RM | 11,723.00 |
| 630 mm | RM | 14,852.00 |
| 710 mm | RM | 17,981.00 |
| For 12.5kg/sq,cm | | - |
| 63mm | RM | 169.00 |
| 75mm | RM | 242.00 |
| 90mm | RM | 351.00 |
| 110mm | RM | 525.00 |
| 125mm | RM | 675.00 |
| 140mm | RM | 847.00 |
| 160mm | RM | 1,116.00 |
| 180mm | RM | 1,425.00 |
| 200mm | RM | 1,757.00 |
| 225mm | RM | 2,225.00 |
| 250mm | RM | 2,736.00 |

| | | | |
|---|---|---|---|
| | 280mm | RM | 3,431.00 |
| | 315mm | RM | 4,344.00 |
| | 355mm | RM | 5,568.00 |
| | 400mm | RM | 7,219.00 |
| | 450 mm | RM | 9,131.00 |
| | 500 mm | RM | 11,256.00 |
| | 560 mm | RM | 14,109.00 |
| | 630 mm | RM | 17,854.00 |
| | For 16kg/sq,cm | | - |
| | 63mm | RM | 456.00 |
| | 75mm | RM | 294.00 |
| | 90mm | RM | 424.00 |
| | 110mm | RM | 634.00 |
| | 125mm | RM | 819.00 |
| | 140mm | RM | 1,025.00 |
| | 160mm | RM | 1,356.00 |
| | 180mm | RM | 1,726.00 |
| | 200mm | RM | 2,131.00 |
| | 225mm | RM | 2,696.00 |
| | 250mm | RM | 3,464.00 |
| | 280mm | RM | 4,169.00 |
| | 315mm | RM | 5,269.00 |
| | 355mm | RM | 6,747.00 |
| | 400mm | RM | 8,747.00 |
| | 450 mm | RM | 11,085.00 |
| | 500 mm | RM | 13,681.00 |

| | | | |
|---|---|---|---|
| 10.12 | Lowering laying Jointing HDPE pipes by heating to the end of pipes with the help of Teflon coated Electric mirror/heater and jointing will be done by semi automatic welding machine as per IS -7634 Part II. Including all cost of material and labour. | | Rate Without GST (In Rs.) |
| | 63mm | RM | 14.00 |
| | 75mm | RM | 18.00 |
| | 90mm | RM | 19.00 |
| | 110mm | RM | 21.00 |
| | 125mm | RM | 26.00 |
| | 140mm | RM | 28.00 |
| | 160mm | RM | 31.00 |
| | 180mm | RM | 32.00 |
| | 200mm | RM | 35.00 |
| | 225mm | RM | 38.00 |
| | 250mm | RM | 44.00 |
| | 280mm | RM | 47.00 |
| | 315mm | RM | 53.00 |
| | 355mm | RM | 58.00 |
| | 400mm | RM | 69.00 |
| | 450mm | RM | 92.00 |
| | 500mm | RM | 110.00 |
| | 560mm | RM | 134.00 |
| | 630mm | RM | 152.00 |

# SCHEDULE - I

## PART 'A': GENERAL INFORMATION

(Strike off whichever is not applicable. Separate sheets should be used, wherever necessary)

| | | | |
|---|---|---|---|
| **01.** | Name & Address of the Bidder | : | |
| **02.** | Name & Address of the firm/Company etc. | : | |
| | a) Registered office | : | |
| | b) Factory/works address | : | |
| | c) Fax Nos. | : | |
| | d) Telephone / Mobile Nos. | : | |
| | e) Email id | : | |
| **03.** | Confirm whether Bidder is Manufacturer : | | Yes/No |
| **04.** | Only manufacturer to give following particulars | | |
| | a) Address of factory | : | |
| | b) Year of starting manufacture | : | |
| | c) Whether same/similar materials Manufactured earlier (if yes, give reference) | : | |
| | d) Yearly/monthly production capacity | : | |
| | e) Maximum yearly production Achieved so far | : | |
| **05.** | Whether the firm is SSI Unit of Chhattisgarh State: | : | Yes/No |
| | a) If yes, write registration No. | : | |
| | b) Whether documentary evidence Regarding registration enclosed | : | |
| | c) Items for registration | : | |
| | d) Period of registration | : | |
| | d) Whether latest copy Competency/ Certificate furnished | : | Yes/No |
| **06.** | Whether the firm is 100% owned by | | |
| | a) State Government | : | Yes/No |
| | b) Central Government | : | Yes/No |
| | If yes, Notification/certificate issued from The competent authority to this effect is Enclosed | : | Yes/No |
| **07.** | a) Whether the bidder is old participant with CREDA | : | Yes/No |
| | b)If yes, whether documentary Evidence is enclosed. | : | Yes/No |
| **08.** | Any other information that bidder may like to give in order to highlight his bid | : | If yes, give details |

PLACE :

DATE :

**SIGNATURE OF BIDDER**
NAME IN FULL
DESIGNATION/STATUS
FIRM/COMPANY SEAL

# SCHEDULE - II

## PART 'B' : COMMERCIAL INFORMATION

(Strike off, whichever is not applicable. Separate sheets should be used. Wherever necessary)

**01.** i) Earnest Money Details : Bank draft/Bankers cheque payable to "CREDA", Raipur

ii) Amount of E.M.D. & full details : ₹. .....

iii) If exempted, state whether the bidder is / Fully Owned State/Central Govt. Unit : SSI Unit of C.G.

iv) Reference of documentary evidence regarding exemption enclosed. : Yes/No

**02.** Whether the offer is valid for 6 months from the date of opening of commercial/technical bid. : Yes/No

**03.** Rate of Sales Tax on the date of bid (exclusive in the rate quoted) :

**04.** **DISCOUNT**:

a) Whether any rebate/discount is offered. : Yes/No

b) If yes, whether the rebate is unconditional/conditional : Yes/No
Rate/amount of rebate/discount

c) If conditional State condition : Yes/No

**05.** **PAYMENT TERMS**:
Whether CREDA's terms of payment is acceptable to Bidder : Yes/No

**06.** **COMPLETION PERIOD OF WORK**:
Whether Bidder is agreeing for completion period of work as Specified in the tender : Yes/No

**07.** **PENALTY CLAUSE**:
Whether agreeable to CREDA's Penalty Clause : Yes/No

**08.** Whether agreeable to CREDA's clause of warrantee period : Yes/No

**09.** **SECURITY DEPOSIT**:
Whether Security Deposit clause is understood : Yes/No

**10.** Indicate State, Central Sales Tax Registration Number State : Yes/No
Central :

(Please Note that in case of non-registration with Commercial Tax, Department Purchase Tax as admissible shall be deducted by the Purchaser from the Bills of the supplier)

**11.** Please mention whether rates offered are applicable for part quantities. : Yes/No

PLACE:

**SIGNATURE OF BIDDER**

DATE:

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY SEAL

# SCHEDULE - III

## PART 'C' : TECHNICAL INFORMATION

(Strike off whichever is not applicable. Separate sheets should be used. Wherever necessary)

**01.** Whether material offered is exactly as per technical specification : Yes/No

**02.** Whether the copies of completion certificate received during last 3 years from other State Nodal Agency or from other Organization for Solar Community Irrigation System (if yes, give details) enclosed. : Yes/No

**03.** Whether pamphlets/technical details literatures along with drawing etc. furnished with the offer : Yes/No (if yes, give details)

**04.** Whether the Bidder agrees to furnish material test certificates in respect of chemical composition and physical properties from Govt./ Govt. approved lab with each batch of supplies. : Yes/No

**05.** Whether the Bidder has furnished details of manufacturing equipments and short history of plant : Yes/No (if yes, give details)

**06.** Whether details of manufacturing process furnished with offer. : Yes/No (if yes, give details)

**07.** Whether all testing facilities are available. : Yes/No
(If so, give details and in case of non-availability of facilities indicate approved lab available in surrounding areas where tests are proposed to be conducted.)

PLACE

DATE

**SIGNATURE OF BIDDER**

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY

SEAL

# SCHEDULE - IV

## TECHNICAL DEVIATIONS

From,
**Bidder Name & Address -**

To,
**The CE,**
**CREDA, HO,**
**Raipur**

**Sub – Technical Deviations**.

**Dear Sir,**

The technical deviations & variations to the specifications stipulated in the tender, for the item quoted are as under -

| Sl.No. | Condition | Clause No. of Tender document | Page No. of Tender document | Statement of deviations and variations |
|---|---|---|---|---|
| - | | | | |
| - | | | | |

**2.** Except aforesaid deviations, the entire order, if placed, on us shall be executed in accordance with your specifications and other conditions. Variation/deviations etc. if found, elsewhere in our offer should not be given any considerations while finalizing the tender.

PLACE
DATE

**SIGNATURE OF BIDDER**
NAME IN FULL
DESIGNATION/STATUS
FIRM/COMPANY SEAL

**NOTE** - Continuation sheet of like size & format may be used as per bidder's requirements and shall be annexed to this schedule.

FORM - A

## SITE CLEARANCE CERTIFICATE For IGGY

01. Name of Site : (Proposed Pond Village For Water refilling)

02. Name of Anicut / River / Water Source : to lift the water for Pond filling

03. Availability of Water in : Anicut / River / Water Source (in MCM)

04. Area of Pond in Hectare (approx) :

05. Required water level increase in pond : per week in CMS.

06. Required Nos. of SPV Surface : Pump & Capacity in HP

07. Total Head (Suction + Delivery) : (as per site condition)

08. Required Water Discharge Per Pump : ..... LPD

09. Size & Length of Pipe Line : .....MM & ..... Mtr

10. Pond use for irrigation purpose if yes then : Proposed area for Irrigation in Hectare.

11. Type & Size of Control room available or required :

12. Layout of available shadow free space : Selected for installation of SPV/ Modules = _____ $M^2$.

13. Name of beneficiary's contact person & his : Mobile No. who shall be responsible for Installation & commissioning of SPV Pump & Pipe Line etc.

14. Fencing required Yes or No. if yes then mention : req. in RM

15. if any Trouble in site :

It is hereby certified that site is technically clear for installation as on date …….. & other relevant details are attached.

Beneficiary/Sarpanch/Beneficiary Department Representative

(Signature & Seal)

Representative of Company/Surveyor

(Signature & Seal)

Assistant Engineer/District Incharge
CREDA, District Office
(Signature & Seal)

FORM - B

## SITE CLEARANCE CERTIFICATE For SCIP

01. Name of Site : (Proposed Pond Village For Water refilling)

02. Name of Anicut / River / Water Source : to lift the water for Pond filling

03. Availability of Water in : Anicut / River / Water Source (in MCM)

04. Area of Pond in Hectare (approx) :

05. Required water level increase in pond : per week in CMS.

06. Required Nos. of SPV Surface :

Pump & Capacity in HP

07. Total Head (Suction + Delivery) :

(as per site condition)

08. Required Water Discharge Per Pump : ..... LPD

09. Size & Length of Pipe Line : .....MM & ..... Mtr

10. Pond use for irrigation purpose if yes then :

Proposed area for Irrigation in Hectare.

11. Type & Size of Control room available or required :

12. Layout of available shadow free space : Selected for installation of SPV/ Modules = _____ $M^2$.

13. Name of beneficiary's contact person & his : Mobile No. who shall be responsible for Installation & commissioning of SPV Pump & Pipe Line etc.

14. Fencing required Yes or No. if yes then mention : req. in RM

15. if any Trouble in site :

It is hereby certified that site is technically clear for installation as on date …….. & other relevant details are attached.

Beneficiary/Sarpanch/Beneficiary Department Representative

(Signature & Seal)

Representative of Company/Surveyor

(Signature & Seal)

Assistant Engineer/District Incharge
CREDA, District Office
(Signature & Seal)

# End